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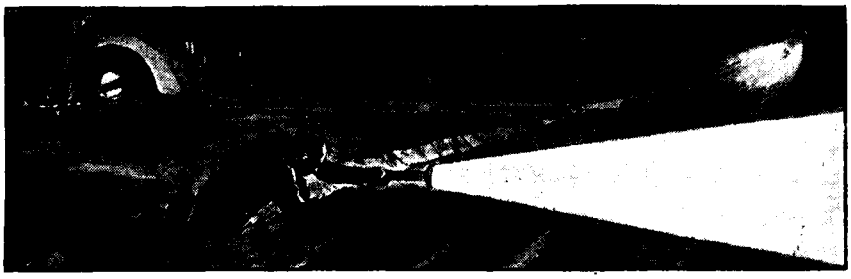
"MY CRIES WERE WHISPERS AS MY LIFE EBBED!"

A true experience of P. S. NICHOLLS, *South Bend, Ind.*

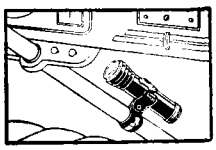
"LATE ONE NIGHT, returning from a fishing trip, I dozed at the wheel of my car while going at a fast clip," writes Mr. Nicholls. "Suddenly there was a blinding crash!

"MY CAR HAD VEERED off the road and smashed head on into a tree. My throat was gashed and bleeding badly. I was able only to whisper—and seemed doomed to die in the inky darkness. Then . . .

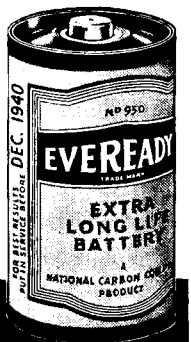


"...I REMEMBERED MY FLASHLIGH ! Somehow I managed to get it from my tackle box and crawl weakly back to the road. Quickly the bright beam of the flashlight, waved in my feeble grasp, stopped a motorist, who took me to a hospital just in time. There is no doubt that I owe my life to dependable 'Eveready' *fresh* DATED batteries!

(Signed) P. S. Nicholls"



SAFETY FIRST! Keep an EMERGENCY LIGHT in your car—for tire changing, roadside repairs, locating lost articles, if lights go out, etc. The "Eveready" Auto Flashlight, shown here, complete with "Eveready" fresh DATED batteries and steering post clamp, only $1.25.



The word "Eveready" is a registered trade-mark of National Carbon Co., Inc.

FRESH BATTERIES LAST LONGER... *Look for the* DATE-LINE

NATIONAL CARBON COMPANY, INC., 30 EAST 42nd STREET, NEW YORK, N. Y.

Unit of Union Carbide UCC *and Carbon Corporation*

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Why Trained Accountants Command High Salaries

—and how ambitious men are qualifying by the La Salle Problem Method

GET this straight.

By "accountancy" we do not mean "bookkeeping." For accountancy begins where bookkeeping leaves off.

The skilled accountant takes the figures handed him by the bookkeeper, and *analyzes* and *interprets* them.

He knows how much the costs in the various departments should amount to, how they may be lowered.

He knows what profits should be expected from a given enterprise, how they may be increased.

He knows, in a given business, what per cent of one's working capital can safely be tied up in merchandise on hand, what per cent is safe and adequate for sales promotion. And these, by the way, are but two of *scores* of percentage-figures wherewith he points the way to successful operation.

He knows the intricacies of government taxation.

He knows how to *survey* the transactions of a business over a given period; how to show in cold, hard figures the progress it has made and where it is going. He knows how to *use* these findings as a basis for constructive policies.

In short, the trained accountant is the *controlling engineer* of business—one man business cannot do without.

Small wonder that he commands a salary two to ten times as great as that of the bookkeeper. Indeed, as an independent operator (head of his own accounting firm) he may earn as much as the president of the big and influential bank in his community, or the operating manager of a great railroad.

Some Examples

Small wonder that accountancy offers the trained man such fine opportunities—opportunities well illustrated by the success of thousands of LaSalle accountancy students.* For example—one man was a plumber, 32 years old, with only an eleventh grade education. He became auditor for a large bank with an income 325 per cent larger.

Another was a drug clerk at $30 a week. Now he heads his own very successful accounting firm with an income several times as large.

A woman bookkeeper—buried in details of a small job—is now auditor of an apartment hotel, and her salary mounted in proportion to her work.

A credit manager—earning $200 a month—moved up quickly to $3000, to $5000, and then to a highly profitable accounting business of his own which netted around $10,000 a year.

And What It Means to You

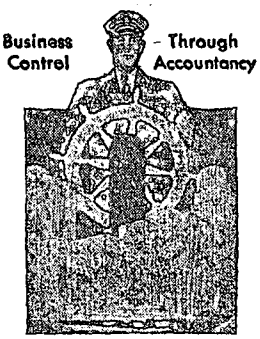
Why let the other fellow walk away with the better job, when right in your own home you may equip yourself for a splendid future in this profitable profession?

Are you really *determined* to get ahead? If so, you can start at once to acquire—by the LaSalle Problem Method—a thorough understanding of Higher Accountancy, master its fundamental principles, become expert in the practical application of those principles—this without losing an hour from work or a dollar of pay.

Preliminary knowledge of bookkeeping is unnecessary. You will be given whatever training, instruction or review on the subject of bookkeeping you may personally need—and without any extra expense to you.

If you are dissatisfied with your present equipment—if you recognize the opportunities that lie ahead of you through home-study training—you will do well to send at once for full particulars. The coupon will bring them to you without any obligation, also details of LaSalle's convenient payment plan.

Check, sign and mail the coupon NOW.



LaSalle Extension University

A Correspondence Institution

DEPT. 10329-HR CHICAGO

Opportunities in Accountancy—Check below and we will send you a copy of "Accountancy, the Profession that Pays," without obligation.

☐ **Higher Accountancy:**

Other LaSalle Opportunities: If more interested in one of the other fields of business indicated below, check here:

☐ Business Management	☐ Commercial Law
☐ Modern Salesmanship	☐ Modern Foremanship
☐ Traffic Management	☐ Expert Bookkeeping
☐ Law: Degree of LL. B.	☐ C. P. A. Coaching
☐ Industrial Management	☐ Business English
☐ Business Correspondence	☐ Stenotypy
☐ Credit and Collection Correspondence	☐ Effective Speaking
	☐ Railway Accounting

Name.....

Present Position.....

Address.....

*Names available on request.

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SCIENTIFICTION'S LEADING MONTHLY

THRILLING WONDER STORIES

The Magazine of Prophetic Fiction

Vol. XVIII, No. 1
October, 1940

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THE DAY TO COME
A Complete Novel of Subterranean Conquest
By DON TRACY

THE WHITE BROOD
A Novelet of the Forbidden Moon
By HAL K. WELLS

THE TOMB OF TIME
A Novelet of Magic Life
By ROBERT ARTHUR

CALLING ALL MARTIANS
Special Interplanetary Feature
By WILLY LEY

and many others

Table of Contents

COMPLETE NOVEL

THE WORLDS OF TOMORROW
By MANLY WADE WELLMAN 93

COMPLETE NOVELETS

WATERS OF WRATH
By ARTHUR K. BARNES 14

MAN ABOUT TIME
By KELVIN KENT 54

THRILLING SHORT STORIES

ONE WAY STAR RIDE
By ROBERT MOORE WILLIAMS 33

COLOSSUS FROM SPACE
By FRANK JOHNSON 44

VIA MERCURY
By GORDON A. GILES 67

MURDER ASTEROID
By EDMOND HAMILTON 80

UPWARD BOUND
By GERALD EVANS 82

SPECIAL FEATURES

SCIENCE QUIZ
A FASCINATING KNOWLEDGE TEST 42

SCIENTIFACTS
By MORT WEISINGER 78

OTHER FEATURES AND DEPARTMENTS

SCIENCE QUESTIONS AND ANSWERS 53
WORLD CONVENTION ANNOUNCEMENT ... 77
HEADLINERS IN THE NEXT ISSUE 117
LOOKING FORWARD 118

SCIENCE FICTION LEAGUE NEWS

THE READER SPEAKS 120
THE STORY BEHIND THE STORY 122
THE SWAP COLUMN 129

ON THE COVER

The cover painting by E. K. Bergey depicts a scene from Frank Johnson's short story, COLOSSUS FROM SPACE.

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Read How These Men Got Better Jobs

THEN FIND OUT WHAT RADIO OFFERS YOU Mail Coupon

BEFORE COMPLETING YOUR COURSE I OBTAINED MY RADIO BROADCAST OPERATOR'S LICENSE AND IMMEDIATELY JOINED STATION WMPC WHERE I AM NOW CHIEF OPERATOR.

HOLLIS F. HAYES
327 MADISON ST., LAPEER, MICH.

I WAS WORKING IN A GARAGE WHEN I ENROLLED WITH N. R. I. I AM NOW RADIO SERVICE MANAGER FOR M_____ FURNITURE CO. FOR THEIR 4 STORES.

JAMES E. RYAN
146 SECOND ST.
FALL RIVER, MASS.

CLIPPING YOUR COUPON GOT ME STARTED IN RADIO. I AM NOW IN CHARGE OF THE RADIO DEPARTMENT FOR THE AMERICAN AIRLINES AT CLEVELAND.

WALTER B. MURRAY
AMERICAN AIRLINES, MUNICIPAL AIRPORT, CLEVELAND, OHIO.

I OWE MY JOB TO THE N.R.I. COURSE. I AM FOREMAN IN A RADIO FACTORY, MAKE MORE MONEY, AND HAVE TWO N. R. I. MEN HELPING ME.

OTTO CLIFFORD
312 W. SEMINARY ST.
CHARLOTTE, MICH.

MY LOUDSPEAKER SYSTEM PAYS ME ABOUT $35 A WEEK BESIDES MY RADIO WORK. IF IT HAD NOT BEEN FOR YOUR COURSE I WOULD STILL BE MAKING COMMON WAGES.

MILTON J. LEIBY, JR.,
TOPTON, PA.

I EARN $10 TO $25 A WEEK IN SPARE TIME AND ALWAYS HAVE PLENTY TO DO. ONLY TRAINED MEN CAN FIX RADIO SETS NOWADAYS. I OWE MY SUCCESS TO N.R.I.

WILLIAM F. RUPP
611 GREEN ST.
BRIDGEPORT, PA.

I will Train You at Home for RADIO and TELEVISION

If you can't see a future in your present job, feel you'll never make much more money, if you're in a seasonal field, subject to lay offs, IT'S TIME NOW to investigate Radio. Trained Radio Technicians make good money, and you don't have to give up your present job or leave home to learn Radio. I train you at home nights in your spare time.

Why Many Radio Technicians Make $30, $40, $50 a Week

Radio broadcasting stations employ engineers, operators, technicians. Radio manufacturers employ testers, inspectors, foremen, servicemen in good-pay jobs. Radio jobbers, dealers, employ installation and servicemen. Many Radio Technicians open their own Radio sales and repair businesses and make $30, $40, $50 a week. Others hold their regular jobs and make $5 to $10 a week fixing Radios in spare time. Automobile, Police, Aviation, Commercial Radio; Loudspeaker Systems, Electronic Devices are other fields offering opportunities for which N. R. I. gives the required knowledge of Radio. Television promises to open many good jobs soon.

Many Make $5 to $10 a Week Extra In Spare Time While Learning

The day you enroll, I start sending you Extra Money Job Sheets which start showing you how to do Radio repair jobs. Throughout your Course I send plans and directions which have helped many make $5 to $10 a week in spare time while learning. I send special Radio equipment to conduct experiments and build circuits. This 50-50 method of training makes learning at home interesting, fascinating, practical. I ALSO GIVE YOU A MODERN, PROFESSIONAL ALL-WAVE, ALL-PURPOSE SET SERVICING INSTRUMENT to help you make money fixing Radios while learning and equip you for full time work after you graduate.

Find Out What Radio, Television Offers You

Act Today! Mail the coupon for my 64-page book, "Rich Rewards in Radio." It points out Radio's spare time and full time opportunities and those coming in Television; tells about my course in Radio and Television; shows more than 100 letters from men I have trained, telling what they are doing and earning. Read my money back agreement. MAIL COUPON in an envelope or paste on a penny postcard—NOW!

I HAVE BEEN IN BUSINESS FOR MYSELF FOR TWO YEARS, MAKING BETWEEN $200 AND $300 A MONTH. BUSINESS HAS STEADILY INCREASED.

ARLIE J. FROEHNER
300 W. TEXAS AVE.
GOOSE CREEK, TEX.

J. E. SMITH, President
Dept. OK09, National Radio Institute
Washington, D. C.

MAIL NOW • Get 64 page book FREE

J. E. SMITH, President, Dept. OK09
National Radio Institute, Washington, D. C.

Mail me FREE, without obligation, your 64-page book, "Rich Rewards in Radio." (No salesman will call. Write plainly.)

Name ..... Age.....

Address .....

City ..... State .....

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FOR MEN OVER 40

An Opportunity

Offered You By a Man Who Built a Nationwide Business After the Age of 55

Starting from scratch, **but with a business device that thousands of companies have since installed, the writer of this advertisement has proved that the seasoned, mature man has nothing to fear from life *if he works in the right field.* So many of our most successful men are well beyond forty, that we are addressing this advertisement to more such men, feeling that they will be a definitely greater asset to us.**

Not A "Get-Rich-Quick" Scheme

Please understand. The only way you can make money with this proposition is by showing results. But take a look at the following: A. O. Davis of New York who made $110.77 clear in one day (SEVEN were REPEAT orders); E. L. Taylor, Virginia, $58.35 in a single day; L. F. Strong, Kansas, $163.38 profit in two days. If a few others interest you, read about these: C. W. Ferrell, who passed 1,000 sale mark, each paying from $5 to $60 net profit per sale; I. J. Keuper, Delaware, over $1,000 clear his first month, and *so forth, more than we can mention here.*

Not "A Morning Glory"

As a sound business man, you ask, "Is this a flash in the pan that will be here today, gone tomorrow?" The answer is that we have now been a national factor for over ten years, yet have barely scratched the surface because you can't get around to see hundreds of thousands of prospects even in ten years. We have men who have been with us for years, still with us today, busy, making real money, plenty of it, and happy to be with us.

A Proved, Valuable Business Device

First, and briefly (*not much space left now*)—We sell an invention that does for anywhere from less than 2% to 10% of the former cost a job that must be done in probably 99% of the offices in the country. You walk into an office and put down before your prospect a letter from a sales organization showing that they did work in their own office for $11 which formerly could have cost them over $200. A building supply corporation pays our man $70, whereas the bill could have been for $1,600! An automobile dealer pays our representative $15, whereas the expense could have been over $1,000. A department store has expense of $88.60, possible cost if done outside the business being well over $2,000. And so on. It has been put into use by schools, hospitals, newspapers, etc., as well as thousands of large and small businesses in 135 lines. Practically every line is represented by these field reports we furnish you, which hardly any business man can fail to understand. And you make a minimum of 67 cents on every dollar's business — on repeat orders as well as first orders — and as high as $1,167 on each $1,500 business done.

This Business Has Nothing to Do With House to House Canvassing

Nor do you have to know anything about high-pressure selling. "Selling" is unnecessary in the ordinary sense of the word. Instead of hammering away at the customer and trying to "force" a sale, you make a dignified, business-like call, leave the installation — whatever size the customer says he will accept — at our risk, let the customer sell himself after the device is in and working. This does away with the need for pressure on the customer — it eliminates the handicap of trying to get the money before the customer has really convinced himself 100%. You simply tell what you offer, showing proof of success in that customer's particular line of business. Then leave the invention without a dollar down. It starts working at once. In a few short days, the installation should actually produce enough cash money to pay for the deal, with profits above the investment coming in at the same time. You then call back, collect your money. Nothing is so convincing as our offer to let results speak for themselves without risk to the customer!

No Money Need Be Risked

In trying this business out. You can measure the possibilities and not be out a dollar. *If you are looking for a business that is not overcrowded* — a business that is just coming into its own — on the upgrade, instead of the downgrade — a business that offers the buyer relief from a burdensome, but unavoidable expense — a business that has a prospect practically in every office, store, or factory into which you can set foot — regardless of size — *that is a necessity* but does not have any price cutting to contend with as other necessities do — that because you control the sales in exclusive territory is your own business — *that pays more on some individual sales than many men make in a week and sometimes in a month's time* — if such a business looks as if it is worth investigating, *get in touch with us at once* for the rights in your territory — don't delay — because the chances are that if you do wait, someone else will have written to us in the meantime — and if it turns out that you were the better man — we'd both be sorry. So for convenience, *use the coupon below* — but send it right away — or wire if you wish. But do it now. *Address*

F. E. ARMSTRONG, President
Dept. 4047-K, Mobile, Ala.

RUSH FOR EXCLUSIVE TERRITORY PROPOSITION

F. E. ARMSTRONG, Pres.,
Dept. 4047-K, Mobile, Ala.

Without obligation to me, send me full information on your proposition.

Name.....

Street or Route.....

City.....

State.....

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Step Up Where You Belong

What Is Your Present Level of Preparation?

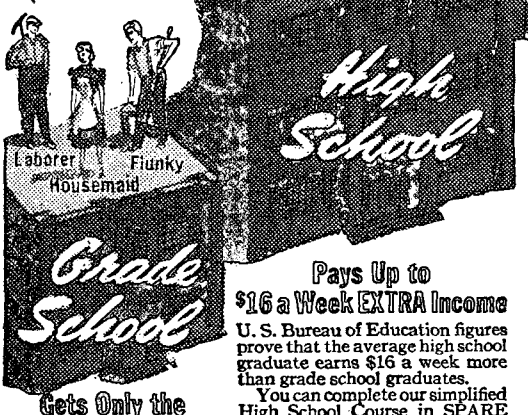
The FIRST proof of personal ability is your capacity to see the *need* for training and to GET IT. The man or woman who doesn't *realize* that education is VITAL to success—or who says he or she "doesn't have time," "hasn't the money" or that study is "too hard"—simply lacks one of the *fundamentals* of the ABILITY to make good. *American School (Chicago) graduates* by the thousands have PROVED that anyone who WANTS an essential education CAN HAVE it. *You can, too!*

You Are Only HALF a Man Until Training Rounds Out Your Ability and Experience

To make your natural ABILITY pay you *profits*, and to get jobs that give you the *kind* of EXPERIENCE that promotes constant progress, you practically MUST back that *ability* with TRAINING . . . combine *experience* with EDUCATION. Using only a PART of your SPARE time, you can train AT HOME for the good position you want. If it is WORTH having, it DEMANDS training and is WORTH your effort!

Write for Facts No Obligation

Make up your mind to enjoy the GOOD things in life. Have FAITH in yourself, in your country and in your future. *Expect* Success and *get ready for it.* Write for FREE Bulletin TODAY. (See coupon.)



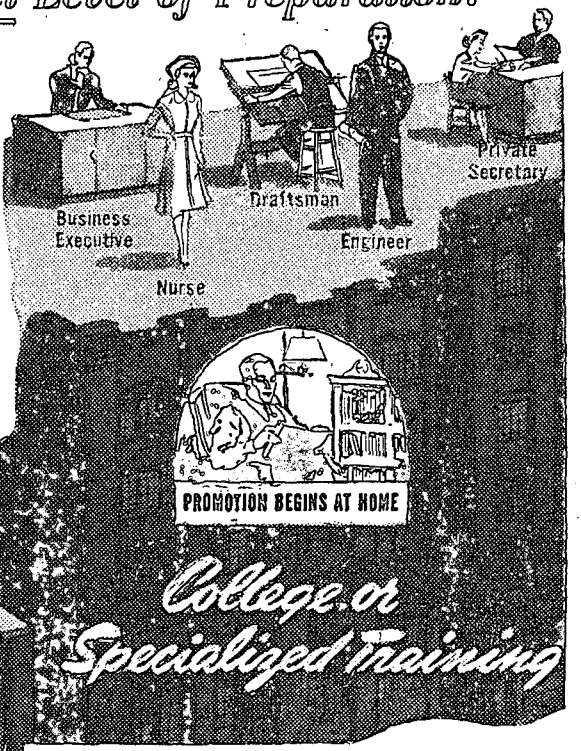
Gets Only the "Leavings"

With only grade school education, you are virtually CONDEMNED to the low pay, menial jobs that others DON'T WANT . . . because THEY are trained for better things. Home study can fit YOU too for more desirable, better paid positions.

Pays Up to $16 a Week EXTRA Income

U. S. Bureau of Education figures prove that the average high school graduate earns $16 a week more than grade school graduates.

You can complete our simplified High School Course in SPARE time at home, as FAST as time and ability permit. MANY FINISH IN 2 YEARS. Equivalent to resident school work—prepares for college, pre-professional examinations, business, industry. Standard texts. Diploma. Or if you've had some high school, FINISH now. Credit for subjects already completed. Single subjects if desired. Low tuition, easy terms. American School, Chicago, est. 1897—endorsed by educators.



Pays Up to $25 a Week EXTRA!

Government figures show that graduates of specialized training of college grade average $25 a week more than high school graduates, $41 more than grade school graduates. But whether you failed to finish college—or failed to complete high school—home study CAN HELP YOU. Basic high school subjects are included in vocational courses listed below.

More than 150 noted educators, engineers and executives helped prepare American School courses. An *Advisory Board* of 20 outstanding authorities—each an active leader in his field—is consulted when our work is prepared or changed. A Staff of competent instructors—home study *specialists*—works closely with the individual student. Why continue in an underpaid, overworked job—subject to periodic layoffs? *Step up where you belong*, into well-paid, pleasant work where you command the admiration and respect of others. For full details, mail coupon RIGHT NOW!

American School, Dept. G758, Drexel Ave. at 58th St., Chicago, Ill.

Gentlemen: Please send me FREE information covering special training in subjects checked below. No obligation on my part.

☐ High School Course

☐ Accounting and Auditing	☐ Drafting and Design
☐ Architecture and Building	☐ Liberal Arts
☐ Automotive Engineering	☐ Private Secretary
☐ Business Management	☐ Mechanical Engineering
☐ Aviation	☐ Radio and Television
☐ Electrical Engineering	☐ Salesmanship
☐ Elec. and Gas Refrigeration	☐ Home Economics Courses
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*Address*_____

Spare Time Training Can Help You in Your Work—and Socially

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THINK OF IT! I JUST MADE THIS RECORD WITH THE NEW HOME RECORDO!
IT'S WONDERFUL — AND SO SIMPLE — PLEASE LET ME MAKE A RECORD.
YES, BOB, AND IT SURE SOUNDS LIKE YOUR VOICE!

With HOME RECORDO you can make a record of your singing, talking, reciting or instrument playing right in your own home, too! No longer need the high prices of recording machines or studio facilities prevent you or your family or friends from hearing their own voices or playing. No experience necessary. No "mike" fright to worry about. No complicated gadgets. In a jiffy you can set up HOME RECORDO, play or sing or talk, and immediately you have a record which you and your friends can hear as often as you wish.

CHARLIE BARNET

and other famous orchestra leaders use

HOME RECORDO

YOU TOO CAN MAKE RECORDS RIGHT IN YOUR OWN HOME

Everything is included. Nothing else to buy and nothing else to pay. You get complete HOME RECORDING UNIT, which includes special recording needle, playing needles, 6 two-sided unbreakable records. Also spiral feeding attachment and combination recording and playback unit suitable for recording a skit, voice, instrument or radio broadcast. ADDITIONAL, 2-SIDED BLANK RECORDS COST ONLY 75c per dozen.

Charlie Barnet with Judy Ellington and Larry Taylor, vocalists in his band, listen to a record they just made with Home Recordo.

ANYONE CAN MAKE A RECORD

If you play a musical instrument, or if you sing, or if you just recite, you can make your own records. You can also use Home Recordo for recording letters to your friends, and they can play them back on their own phonographs.

HAVE RECORDING PARTIES

You'll get a real thrill out of HOME RECORDING. Surprise your friends by letting them hear your voice or playing right from a record. Record a snappy talking feature. Record jokes and become the life of the party. Great to help train your voice and to cultivate speech. Nothing to practice . . . you start recording at once . . . everything necessary included. Nothing else to buy. Just sing, speak or play and HOME RECORDO unit, which operates on your electric or hand-winding type phonograph, will do the recording on special blank records we furnish. You can immediately play the records back as often as you wish. Make your HOME MOVIE, a talking picture with Home Recordo. Simply make the record while filming and play back while showing.

SEND NO MONEY! HURRY COUPON! START RECORDING AT ONCE!

Operates on Your A.C. or D.C. Electric Phonographs, Record Players, Radio-Phone Combinations, or Hand Winding Phonographs & Portables

COMPLETE OUTFIT $2.98

INCLUDING SIX TWO-SIDED BLANK RECORDS ONLY

HOME RECORDING CO.

Studio KP

11 WEST 17th STREET NEW YORK, N. Y.

HOME RECORDING COMPANY
Studio KP, 11 West 17th St., New York, N. Y.

Send entire HOME RECORDING OUTFIT (including 6 2-sided records) described above, by return mail. I will pay postman $2.98, plus postage on arrival. (Send cash or money order now for $3.00 and save postage.)

Send ..... dozen additional blank records at $.75 per dozen.

Name.....

Address.....

City and State.....

Note: Canadian and Foreign $3.50 cash with order

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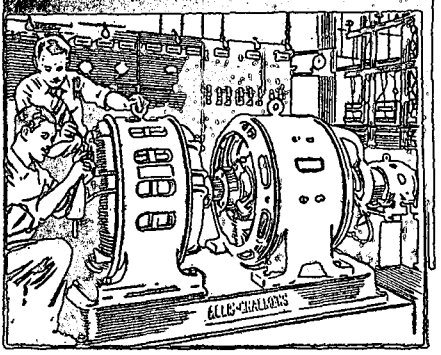
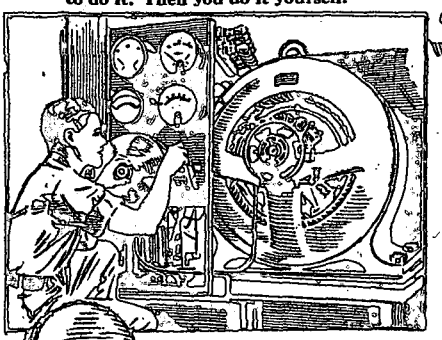
TRAIN FOR A BETTER JOB IN ELECTRICITY

12 WEEKS TRAINING

ACTUAL WORK ON ELECTRICAL MACHINERY



First you are told and shown what to do and how to do it. Then you do it yourself.



Send Today For Details of My "PAY-AFTER-GRADUATION" PLAN!

Are you out of a job? A : you working long hours at low pay in a job you don't like? Are you wonc ering where you can find a job that will give you steady, interesting work with better pay? If this applies to you and you are between 16 and 40 then you owe it to yourself to **read every word of this message.** Here at Coyne you have an opportunity to **get 12 weeks of practical shop training** in ELECTRICITY—training that can help fit you for your start towards a better job and better pay—and you can **get this training first and pay for it after you graduate.** My school is not the usual kind of school. It's more like a shop—**a place where a fellow who likes to get his hands on machinery feels right at home.** For that's exactly how you train, and because you **"Learn by Doing"** right here in my shops **you don't need previous experience or advanced education.** You do real work on real motors, generators and dynamos. You operate big, factory-type switchboards, wind armatures and do house wiring. You train in these and other branches of electricity—all with capable instructors to tell you and show you how. **And right now I'm including valuable instruction in Diesel, Electric Refrigeration and Air Conditioning at no extra tuition cost.**

EASY TO LEARN —EASY TO PAY

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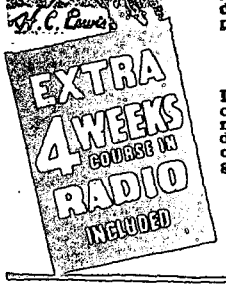

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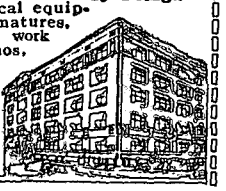

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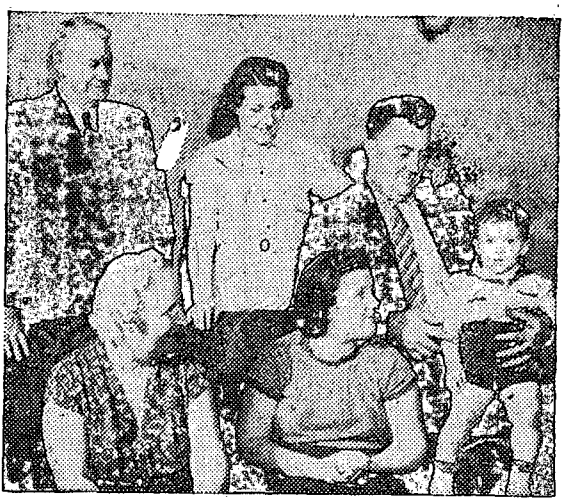

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CHAPTER I

Sea Justice

THE sleek anti-gravity rocket skimmed along at an even eight hundred miles per hour. It was painted with uneven blotches of blue and gray. This camouflage meant she was built for trouble. Right now the rocket ship was cruising northward, dangerously low over the surface of the open sea. This meant she was definitely looking for a fight.

In the glassite bow were three men. One was the chief pilot, Galen. The second was Dr. Myles, noted oceanographer, now acting as observer. But the control room was dominated by the tremendous presence of Jonathan Hardesty.

Like all Hardestys from time immemorial, the young man was well over six feet tall, massive as Gibraltar, a man of iron. Barely twenty-four years old, young Hardesty was two-fisted and grim. He had to be, he was owner-manager of the mighty Hardes-

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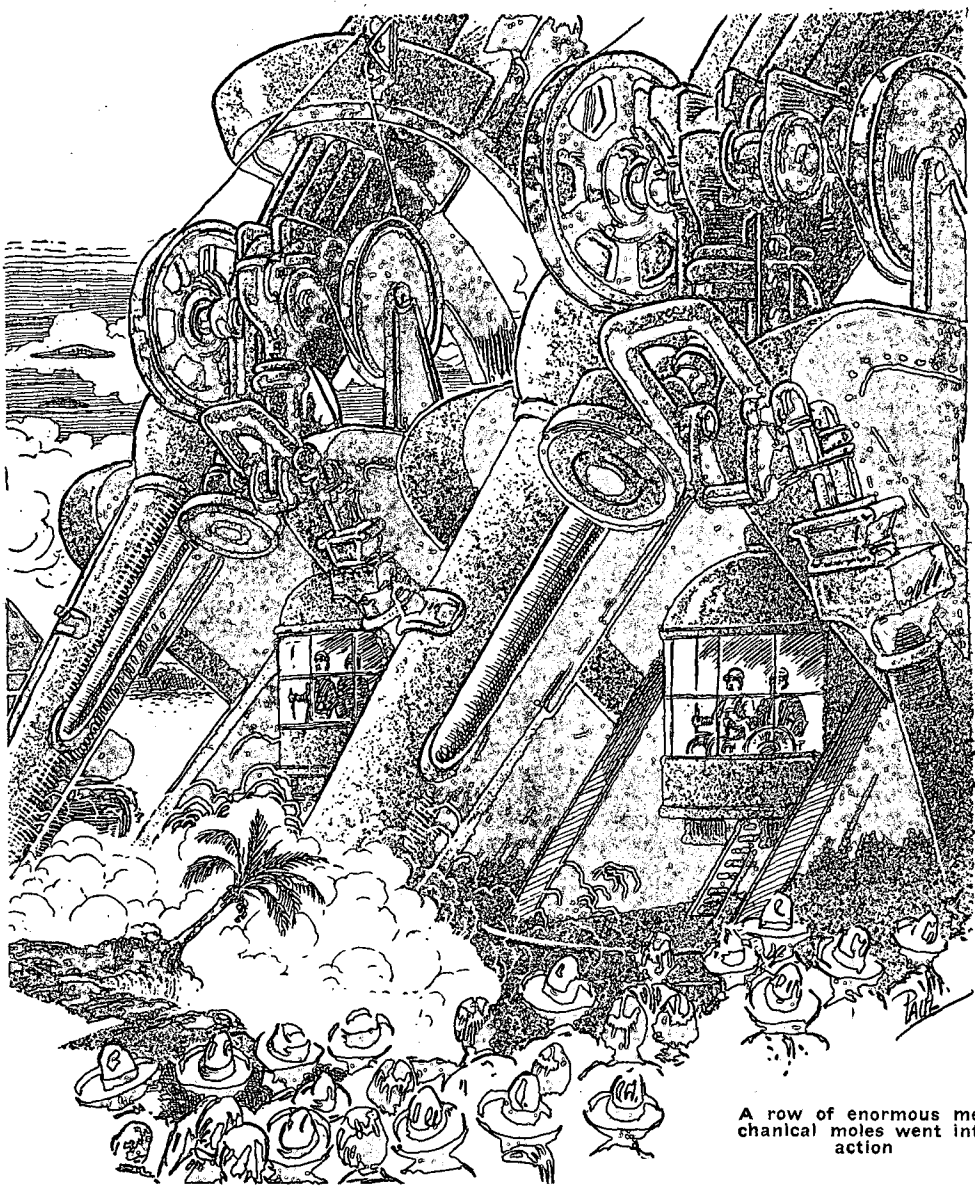

A row of enormous mechanical moles went into action

ty sea ranch, hundreds of thousands of acres of the richest portion of the sea. Young Hardesty was the thirty-first century equivalent of a feudal baron. He was tough. It was his only chance for survival.

A sharp exclamation from Dr. Myles brought Hardesty to the port observation station.

"There they are, ahead about two points off the port bow!"

Visibility had been poor, but was rapidly clearing as the Sun dispersed a late morning fog. Directly below the speeding rocket ship was the bright blue of the Gulf Stream, flowing across the Atlantic toward Europe. A hundred yards away was its edge, clearly marked by the line of darker water. Perhaps a half-mile farther, well into the dark waters, was the line of buoys that marked the extremity of the Hardesty sea ranch.

Hardesty moved with deliberation.

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He took Dr. Myles' glasses, picked up a faint cluster of activity on the sea's surface—a double burst of smoke.

"Right. This is the position that came in on Burton's SOS. Galen, rise and decelerate. Hover over them."

Galen moved the lever marked anti-gravity. The occupants of the ship felt a curious sickish sensation as weight was sharply decreased. The ship itself bobbled in the warm-air thermal rising from the water. Galen deftly moved levers and switches, skilfully jockeying several hundred feet higher. Flame spewed from the forward rockets.

Hardesty, clinging with one rock-like fist to a safety strap, peered down at the scene beneath.

"Dirty, murdering poachers," he said calmly.

BELOW was an ugly bit of thirty-first century range war, bloody and spiteful. Drifting soggily near the line of buoy markers was a speedy launch. It was painted with the famous black-and-gold Hardesty coat of arms, with the motto *"Per fortuem, per intelligentiam."* It contained equipment for cleaning buoys and electrically testing the strength and condition of the retaining anchor lines. In the stern, holes had been smashed by explosive bullets. The launch was shipping water badly.

Inside Hardesty property, in the blue of the Gulf Stream itself, was a strange contraption. It was a sort of barge, squat, wide, and low in the water. On deck squatted two shacks. Between the warped boards of the largest, machinery could be glimpsed. An oversized flexible metal tube ran down into the water like the snout of some weird monster. A sizable pile of dully glistening powder spilled out of the larger shelter onto the deck.

This ramshackle extraction outfit, encrusted with salt, its metal parts corroded to the point of collapse, was a familiar sight along continental shores. They dotted coastal waters. Rickety affairs, often no more than a shack on a raft, they worked endlessly at their sea claims within easy distance of shelter in case of rough weather. This was the working capital of the men who tried, with insufficient money and equipment, to scrape a living from the sea.

A dozen of them stood on deck, guns and heat rays in their hands. Timing their shots with the rolling of the sea, they were blasting explosive shells at the Hardesty launch, trying to make hits below the water line. The others were laying down a heat ray barrage to keep Burton, the Hardesty line rider, in the shelter of the cockpit, where he could do no bailing.

The strategy was proving successful when young Hardesty's rocket drifted into position above the battle. Someone spotted it, yelled in sudden fright. Instantly all faces stared up at it.

"Give it to 'em, Boss," the pilot urged. Galen was a hard-bitten veteran of two wars and several expeditions into space, a scrapper at the drop of a helmet.

"Wait," said Hardesty, stepping to the loudspeaker mike. Presently his voice roared out metallically to those below. "Attention, you thieves down there! Lay down your arms and surrender, and you will receive fair trial. Fight, and you'll get what all trespassers and murderers deserve!"

For the space of a dozen heartbeats there was poised silence, while the upward gaping gang of poachers gathered their wits. Intermittently came the muted *pow* of a rocket blast as the almost weightless ship maintained its altitude. Then the hull rang sharply as a miniature HE shell exploded dangerously near the observation bow. Action burst out on the barge deck. It was war, swift, merciless, bitter.

Shells and rays hammered at the Hardesty ship in a desperate attempt to put it out of commission in one quick thrust.

The attempt failed. Galen's fingers were steady, darting with amazing agility over the bank of controls. The ship dodged aside, swooped up, ducked into the high fog. When it came down again, Hardesty's proton cannon was blasting furiously.

THREE men were caught flat-footed, trying to swing the muzzle of an ancient anti-aircraft gun into ac-

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tion. They wilted, slumped in smoking heaps of tortured flesh.

Then, like a terrier routing out rats, the AG's proton stream prowled over the sizzling deck while the frantic poachers scattered in panic. Some of them darted for the companionway into the hold. But Hardesty anticipated that move. He sprayed the opening with an unending stream of subatomic bullets. The companionway exploded, spattering red-hot metal and free energy all over the boat.

From then on it was no contest. The battle was soon over, with the survivors waving a white flag. Young Hardesty stepped away from the gun and leaned against the wall. He looked faintly sick. Dr. Myles spoke with sympathetic understanding.

"Nasty job, youngster, but it has to be done."

Galen, the old warrior, grunted in disappointment.

"They give up too easy. They knowed what they was riskin' when they snuck into our waters. Shoulda been ready to fight it out. The breed's gettin' soft. Now I mind, in your dad's time, when them fellers'd make regular poachin' forays onto the Stream every month or so. Sometimes we'd spot 'em, sometimes not. When we did, they allus put up a good scrap while they was tryin' to get away. Sometimes they made it. Sometimes they didn't. But nowadays? Faugh! They're just plain sneaks." The ship gently descended to a precise landing by the poachers' barge. Hardesty and Dr. Myles stepped onto the deck to examine the ragged crew. Aside from the two leaders, they were typical "bowlies," with the strange, bewildered look common to most of them. Deep in their eyes was the pain of having been uprooted, and harried by circumstance into a strange occupation, on a strange element.

They were not men of the sea. Most of them had never turned a furrow. Many had to trace their ancestry back hundreds of years before they could find the last farmer in their family. Nevertheless the soil was in their blood. They were born to be dirt-farmers, not homeless tramps on a treacherous and unfamiliar sea.

Even their nickname, "bowlies," indicated this truth. It was a corruption of an expression that had its origin hundreds of years before. The Dust Bowl, spreading like a cancerous blot over central North America, had driven the farmers from their worthless land.

With only the coastal regions arable, most of them had been forced to turn to the wealth of the sea for their livelihood. But they could not finance large-scale activity, and had no particular talent for marine mining or cultivation. Foredoomed to miserable failure, they were a lost legion.

Hardesty sternly smothered the sympathy stirring in him. The code of the sea-holder was kill or be killed. One sign of weakness and the jackal pack would swiftly overthrow the system of mighty sea ranches. Iron control, ruthless, summary justice meted out to all invaders—those were the price of existence.

HE turned to the two leaders and felt satisfaction. This was the type he didn't mind dealing with. They were snarling, belligerent.

"Nasty customers, eh? What's your name?"

"Sam White, tha's who I am," one of the bearded leaders snapped. "An' you ain't got no right to treat us like this. It's oppression, that's what. The sea belongs to the people. Greatest good for the greatest number. It ain't right for guys like you to grab all the best waters while guys like us have to starve—"

Hardesty ignored the poacher and went to the pile of powdery crystals that had spilled from the extraction shed.

"What's the verdict here, Doctor?" he asked the oceanographer.

Dr. Myles scooped up a handful, sniffed and tasted the stuff.

"Mostly potassium and manganese, some iodine. Their separator is in disrepair, judging from the amount of salt still remaining. . . . I would say your new acquaintances have been squatting here at least three days. It's a fairly profitable haul they have here."

Together the two men peered into

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the smaller shack.

"As I expected," murmured Myles. "An Alvan Processor." This was the marvelous apparatus which increased manifold the surface tension and density of the surrounding water. The ship so equipped could ride out the roughest storms in comparative safety. Only two classes of sea miners could afford this expensive machine —those with capital, and thieves.

Just then the Hardesty launch scraped against the side of the barge. Galen had brought in Burton, the line rider. He was just a kid, pale from excitement and loss of blood. His left arm hung in bloody tatters.

"They—they were operating in the fog, sir. Musta heard me coming before I heard them. So they shut off their engines and ambushed me. Sorry—I—" He lurched, almost fell.

Hardesty caught him and carried him gently to the rocket ship. When he stepped back to the barge deck, his jaw was set hard. His eyes were grim as he sought out the two leaders of the poaching gang.

"That makes it just so much tougher for you birds. Pile into the ship, the whole mob of you. You're going to get a taste of real sea justice. . . . Galen, you can tame this valiant little army who tackled young Burton in the face of such tremendous odds. Give 'em a touch of the paralysis ray, enough to keep 'em quiet till we get back home. . . . Dr. Myles, I think we might confiscate this stuff and give it to some charitable organization, before sinking the barge."

He turned back to the poachers, saw they still stood uncertainly.

"Well!" he roared at them. "Get going! You're not dead yet—not quite yet."

They jumped, scuttling toward the rocket's open port. The voluble leader with social inequality ideas went pale at Hardesty's reminder. The penalty for theft and assault on the high seas was the same that had been meted to pirates since time immemorial —death!

"We ain't worried," he retorted. "Things are gonna be different around here pretty soon. You guys won't act so high-handed no more."

CHAPTER II

Judy Vance Enters

YOUNG Hardesty sent the leader scurrying into the rocket ship. Dr. Myles transferred the stolen minerals to the hold of the AG.

Galen lifted the ship above the doomed vessel and hovered there while Hardesty aimed the cannon. A ravening stream of protons plowed down through the heart of the barge.

Smoke and flame quickly burst out. Metal reddened and fell inward as the ray bored deeper. Internal explosions racked the squat hull. The rising column of smoke turned to hissing steam when the sea poured in through a gaping hole in her bottom. The bow lurched high in the air in a spasm of death agony. Creamy bubbles marked her grave, and these turned black when the inevitable oil slick rose to the surface.

Before Hardesty could give the command to fly homeward, another rocket ship came into view. Rapidly it approached the site of the recent battle, now marked only by the drifting launch. It was an old Flamingo amphibian, a cheap mass production affair. Its original crimson paint job was almost obliterated. Two of the after portholes were covered over with rusty sheet metal instead of glassite. Hardesty watched the new arrival with hard-faced wariness.

"On your toes, Galen. If this punk is looking for trouble, we wouldn't want to disappoint him."

Galen grinned. The Flamingo circled widely about the area at low altitude, came to rest on the sea near the launch. The tele-screen in the Hardesty ship buzzed and the warning light blinked peremptorily.

"The punk wants words with us," Hardesty observed, snapping the switch which opened communication between the two ships.

On the screen flashed the image of a girl. She was tall, slender, with flaming red hair. Its soft and expert disarray gave a wind-tousled effect. For a moment the young giant said

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nothing, and with reason. The girl was enough to take any man's breath. Her angry eyes stared hotly.

"I suppose you're Hardesty."

Hardesty's slow, irritating smile spread across his face.

"I suppose I am. And may I ask to whom I have the pleasure of speaking?"

"I'm Judy Vance." She had words to say and meant to dominate the interview.

"Oh, yes. I've heard of you. Supposed to be the leader of the bowlies, crusading for the bowlies, against the cruel and arrogant 'moneyed interests,' who take sadistic delight in grinding the poor."

Judy Vance made a visible effort to restrain her temper. "I am the bowlies' leader—"

"Then you're a rotten leader," interrupted Hardesty. "You encourage your followers to skulking thievery and cowardly assault. You must know what the penalty is."

The girl whitened in startling contrast to her hair.

"You mean you've already destroyed the entire crew of—"

"Not yet. They're in my ship. One of them's been entertaining us with some of your second-hand, shop-worn social theories. Don't worry. They'll get a fair trial."

"Fair trial! With Hardesty the court, Hardesty laws, Hardesty the prosecutor, and Hardesty the jury! Is that your idea of a fair trial? It's nothing but a sop to your conscience, a wicked effort to legalize murder. Oh, I'm not arguing for Sam White or his ilk. It's the genuine bowlies that I'm fighting for. They're not criminals. They've been made so desperate by poverty that they'll listen to any sort of proposition. You can't condemn them!"

AS Hardesty watched the girl, he felt a strange emotion surging within him. Ire, he decided. In an annoyed tone, he replied,

"Lady, our laws around here are harsh, but they're just. Everyone knows it. Your playmates knew what they risked when they started plundering the Hardesty sea ranch. . . . I'm sorry, but we have a man aboard in need of medical attention—"

He paused. The girl was laughing. It was without humor, a forced, vengeful sort of laugh.

"You find this amusing?" Hardesty asked.

"I just remembered," Judy Vance said. "You'll never have time to render your warped ideas of justice on those men. You don't know it yet, Mister Hardesty, but you're through as a little tin god."

Hardesty's jaw jutted. "There never was a Hardesty who shivered at a threat!" Savagely he slapped the switch that turned the screen dark. Someone snickered. Hardesty whirled to see Dr. Myles hide a smile.

"So you find something funny, too?"

"Sort of. Miss Vance got under your skin, didn't she?"

"Nothing of the kind. She's just an impudent upstart who needs to be put in her place." He reddened as he remembered how they had shouted at one another with embarrassing lack of dignity. "But it's odd," he puzzled while the AG sped homeward. "That's the second hint we've had of something about to happen. Wonder what she meant. . . ."

He soon found out. The instant Hardesty City loomed over the horizon—a mighty pontoon city like a copper jewel on the bright blue ribbon of the Gulf Stream—young Hardesty knew there was trouble.

On the spreading tarmac by the ocean's edge were five palatial rocket yachts. The gigantic ships had every scientific device known to mankind for safe and luxurious travel even through space. Their distinctive color designs told Hardesty whom they belonged to—the world's five greatest sea-holders, other than Hardesty himself. They dominated the ocean's most desirable currents, the Gulf Stream and the Japan Current. Only a matter of gravest importance could have brought them together.

Sensing a crisis, old Galen expertly piloted the AG into a landing.

"Myles an' me'll take care of Burton an' the prisoners," he offered. "You scoot along an' find out what's up."

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Hardesty nodded and jumped out. His personal surface car was waiting. He piled in and tromped on the accelerator. He shot off like a lightning bolt toward the center of the City.

His course took him first through the orderly rows of his workers' copper-coated cottages. These gave way to the long, low buildings housing the vast scientific enterprises that were Hardesty City's reason for existence.

The Hardesty sea ranch was not a prospecting venture, nor a fly-by-night outfit, trying to make a quick profit before moving on to more fertile areas. It was Big Business on a tremendous scale. Huge extraction plants methodically removed and purified the valuable minerals of the sea — potash, bromine, manganese, iodine, and many others.

A large saltern, working only at rare intervals, turned enough salt out to supply all Hardesty City's workers for weeks. Another series of buildings housed the unit that recovered valuable chemicals and medicinal drugs. There were few known chemicals which they could not find in the water, the sediment, or the marine life of the sea.

Just beyond, jets of steam marked the ceaseless endeavor of the giant plant which distilled pure water from the ocean brine. There was also the machinery which utilized the steady current to generate practically cost-free electricity, cheaper by far than atomic power.

BUT these activities represented only a part of the entire enterprise. A sharp right turn brought Hardesty's speeding car in sight of the other and equally important work. The greatest wealth of the sea, as the Hardestys and their kind early learned, was not to be found in its mineral resources but in its natural productivity. Countless species of animals and plants of commercial importance grew there abundantly.

Much of Hardesty City's suburbs were devoted to the pursuit of aquiculture. Only the top few inches of soil are productive. But plants can be grown in sea water to a depth limited only by the penetration of sunlight—two hundred to eight hundred feet. No dry spells, frost, insects, could ruin the crops. Scientific progress had made the sea more productive per unit than dry land.

Instead of being forced to eat spinach, the people in Hardesty City got their vitamins and essential food elements from over a hundred delectable marine plants. They raised Irish moss, green laver, dulse, seatron, kombu, anomori, kijiki, arame, and murlins.

Hardesty tooled his speedster into the heart of town, where the low tower of Hardesty House loomed above the surrounding buildings. He whipped into the parking space, shut off the motor, and made swiftly for the private elevator entrance which led to his penthouse. The Sun was setting, and lights were beginning to blossom in the Marine Room.

Famous the world over as a rendezvous for tourists and sophisticates, Hardesty House made additional profit for its shrewd management by catering to the most exacting gourmets. Its sea-food dinners, featuring fish, marine plants and shellfish specially developed by the Hardesty marine biologists, were unmatched anywhere on the globe.

Five men awaited his pleasure in that penthouse. Though each was older than he by far, they all turned as if to a recognized leader when he entered the living room.

Sir Cecil Harwicke, patriarch of them all at the age of a hundred and thirty-seven, James Jonson, Rousseau, the fiery Frenchman — these three, with Hardesty, controlled the entire Gulf Stream from Caribbean to Arctic Ocean. Chiang Wu Sen and T. Yamada, leading figures in the United Orient, dominated the Japan Current. All five were badly worried.

"Been waiting for you, Hardesty," was Jonson's brusk greeting. "Heard the news?"

"No. Been away a few days, checking the outlying districts of the ranch. What's up?"

Characteristically none of them wasted time in formalities. They were blunt, hard men who understood

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and respected one another.

"Just this. An International Sea Claim Commission has been set up. One member from each nation in the Northern Hemisphere whose population is affected by sea mining and aquiculture. Has the power to pass on the validity of all sea claims. Obviously the business is just a stooge for the bowlies and similar groups from other countries. Under domination of crackpots like that Vance she-devil."

"It is a plot of the most abominable!" burst out Rousseau, unable to contain himself. "A scheme underhanded to smash us, break up our ranches, to allow those hordes to sate themselves in one grand orgy of mining on our richest holdings! It is—it is—" He stopped, spluttering indignantly.

JONSON pointed through the open doorway into Hardesty's private office. On the desk stood Hardesty's personal message receiver. It operated on an extension of the stock ticker principle, with its tiny spool of film holding a message. Above it a red light burned, till the message was removed from the machine.

"That's a summons," Jonson said, "to a hearing by the new Commission. To determine whether the continuation of our sea ranches is contrary to public interest. If so, they're to be broken up and opened to mining claims by individuals. Meantime, exercise of our local law on trespassers and poachers is forbidden. Hearing to be held in New York next week. Submit briefs and argument then."

Hardesty's eyes were granite. "Just like that, eh?"

"Just like that . . . Looks like those bowlies have someone smart enough to whip up a lot of political pressure against us. The squeeze is directed against us on the Atlantic. Chiang and Yamada aren't in on this because there's no demand from Orientals to break up their estates. But—"

"But we fear the establishment of a dangerous precedent," interjected Yamada sibilantly.

"Exactly. Question is, what's our move?"

"Just sit tight," decided Hardesty. "Attend the hearing, present our side of the case. If the Commission proves to be a bunch of crooks paid to legislate against us, or if they're just plain dumb, then we may have to go into action. But till the decision is actually handed down, our play is to do nothing."

CHAPTER III

End of a Dynasty

THE I.S.C.C. hearing was held in a bare little room, in a high tower overlooking the incredible engineering fairyland that was thirty-first century Manhattan. Just a handful of people were there, less than a score of witnesses to the brief, shocking drama.

Only one newscaster was permitted, but his aparatus was tuned to a world-wide hook-up. Millions of watchers would be clustered around public and private televisors, hanging on every word and gesture in that courtroom.

The law was streamlined in that age. There were no legal tangles, no endless jousting of lawyers or confusion of issues. It would be a simple statement of the case by accredited spokesmen for the two contending groups, bowlies *versus* wealthy sea-holders. There would be no appeal.

Hardesty met Judy Vance in that room just before the hearing began. She gazed at him with a maddeningly superior expression, already savoring triumph.

"Remember what I told you a few days ago?"

Hardesty fought down a hot reply, angry with himself that this girl could stir him so to fury.

"I remember," he said coldly. "But the last card is not yet played in this game."

A gavel rapped, and a clerk intoned the circumstances surrounding the issue in question. Judy Vance was

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called upon to state the bowlies' arguments.

"This is not merely a class war," the girl stated after submitting her written brief. "It is a fight for the right to existence itself—the right of every man to share in some measure the wealth of the Earth."

Deftly, with the skill and passion of a natural orator, she turned back history's pages six hundred years. The gigantic American Dust Bowl and its smaller counterpart in Europe had begun to spread from its original boundaries like some malignant disease. In a hundred years' time it had spread from Rockies to Appalachians. The land was worthless, arid, unfertile. Thousands of farmers were driven from their homes.

Then came the fabulous "sea-rush" of 2507, brought about by the simultaneous development of two inventions. One was the Alvan Process machine. The other was the Dobbs Extractor, which enabled men to remove the mineral wealth of the sea cheaply and profitably. For a time the bowlies found livelihood as they turned to the sea, staking claims all along the continental coasts and even out toward mid-ocean.

The Golden Age of Industry followed in the twenty-sixth century, brought on by the rapid development of space travel and consequent demand for all minerals and chemicals that could be found in the seas. The lost legion of the bowlies found security for a time.

"But it did not last," continued the girl in her intense voice. "Gradually the mineral wealth of the oceans became depleted during five hundred years of steady extraction. Prices dropped. It has now come to such a state that there are only meager profits to be scraped out from sea mining. The bowlies are once again the legion of the poor.

"It's not a question of complete exhaustion of minerals. That, of course, is impossible. But in the static portions of the sea, the mineral content has been so reduced that there are no longer any sure profits for small-scale operators. The bowlies' sea-claims have been worked out."

THAT brought Judy Vance to the main point of her argument. During the original rush, the Hardestys, Jonsons, and their kind, with great wealth at their command, staked out tremendous sea ranches on the Gulf Stream. These remained intact over five hundred years, situated on the richest part of the ocean. This was true partly because the steady current permitted generation of cost-free power. The warmer waters were also much more suited to aquiculture. But the Gulf Stream brought a constantly renewed stream of rich water from its Caribbean source.

There was no extensive sea mining in the Caribbean. To begin with, the Stream there was also a Hardesty property and was kept reasonably clear of any such activity. But more important, it was in the hurricane belt. Meteorological changes in the last three centuries had increased the frequency of violent hurricane. Any large-scale attempts at mining, therefore, would find their investment completely wiped out every few weeks. A thousand Alvan Processors could not withstand the fury of the contemporary hurricane.

"So that's the situation today," cried Judy Vance indignantly. "Thousands of us face starvation, while a handful of wealthy individuals control vast stretches of the sea. Those waters would mean a decent living for all. If these great ranches were being utilized, I would be silent. But it is a fact that less than five per cent of the sea ranches are under actual use. The rest is untouched, going to waste, instead of giving some poor devils presentable clothing and proper food.

"That, gentlemen, we contend is a social oppression. No man has the right to deny others the privilege of comfort and honest, lucrative employment. Whatever benefit the sea-holders may once have been in a pioneering sense, they've now outlived their usefulness. It's a social crime to permit them to exist in the light of present-day conditions. The ranches should—be—dissolved—now!"

Judy Vance's vibrant tones filled the chamber long after the conclusion of her impassioned speech. At last

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there was tense quiet as the nine judges conferred briefly. The Chief Commissioner, whose calm face had expressed nothing during the entire hearing, presently turned to Hardesty.

"You will present your case now, please."

Young Hardesty stepped up to tender his brief. The burden of preserving intact the labor of hundreds of years weighed heavily upon him. He was no public speaker. His dry dispassionate tones were a marked contrast to the girl's dramatic appeal.

"We, too, have our traditions," he began quietly. "They are as old as those of our opponents and, I think, just as noble. But I will not bore you with a recitation of them. I feel the subject is not pertinent. I might also remind the Commission of our long and honorable record of public service. The sea-holders, in the days before rocket clippers completely superseded ocean-going ships, kept the shipping lanes open.

"They established free meteorological stations in mid-ocean to aid Government weather forecasters. They advanced oceanography and related scientific research immeasurably. In many ways they have been of help to mankind. But that, too, is not germane to the issue. The single point in question is whether the existence of the big sea ranches is to the public interest."

YOUNG HARDESTY paused, looked searchingly at the lovely girl.

"Miss Vance seems to think we are at opposite poles. In reality, our cause is one. For the Hardestys, the Jonsons, the Harwickes, and the others, have always been fully conscious of the obligation of Wealth—to preserve, not to despoil. Miss Vance points out that we work only five per cent of our holdings, but that is not waste. It is intelligent, planned conservation.

"By her own tongue, Miss Vance convicts her kind of ruthless exploitation. Five hundred years ago there was plenty for all. Now there is little, except where it has been conserved. The fate of the whale and the sea otter, the forests, the oil deposits, and mines of Earth, will be repeated if thousands of small operators are permitted to run rampant over the last remaining areas that are still rich.

"Gentlemen." Hardesty's grim voice took on swift urgence. "Heedless exploitation of the Gulf Stream will dump an oversupply of minerals on the world market. It will knock down prices to ruinous lows. It will smash the economic system that is based upon the mining of the sea. The consequent upheaval will have incalculable results. And Miss Vance, instead of benefiting her kind, will have completed their own ruination."

That marked the end of the starkly simple trial. Hardesty and his colleagues returned to their hotel suites, to await the final decision. Three days they passed in torment, sleepless, their tempers constantly ragged.

When the message finally came, Chiang and Rousseau were out to dinner. The others were in Hardesty's room. Jonson burst in with tragedy naked in his eyes. Hardesty slowly stood up and the two men stared at each other in silence.

"So we've lost," said Hardesty, before the other could blurt his news.

"The fools!" raged Jonson. "The dumb, blind bureaucrats! They've legislated us out of existence and smashed a whole economic system! Just like that—with not even so much as thinking of the results. Well, it won't be without a fight, I can tell you that. There'll be a lot o' blood shed before any Jonson gets wiped out."

Hardesty felt a hard knot slowly forming in the pit of his stomach. He had a sudden comprehensive vision of those thousands upon thousands of Dobbs Extractors sucking relentlessly at the water. Day and night, for all the weeks and months and years that went to make up five centuries, they drained even the limitless wealth of the sea. Those heavily worked coastal areas had quickly been stripped to an unprofitable level. They would make short work of the Gulf Stream.

Although it had been a possibility, Hardesty had never really believed that any group of commissioners could be so stupid as to rule against the sea-holders. But it had come, at

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last—the end of an era, the fall of a dynasty. . . .

HARDESTY turned, aware that someone had spoken to him. It was Jonson, still raving in his fury.

"Fight?" asked Hardesty. "Against the combined military forces of nine nations? It could end only in one way, with lives thrown—"

"Well, what're you going to do?" snarled Jonson. "Quit?" He pointed to the tiny coat of arms embroidered on Hardesty's singlet. "By intelligence. By courage. Lot o' good that'll do you now! I tell you, the only thing is to go down fighting! Maybe if we put up a stiff front they'll change their tune a bit."

But Hardesty was not listening to the argument that now raged bitterly. He was staring abstractedly out the window, his brain churning. The uproar died down. Sir Cecil, who rarely spoke, cleared his throat.

"It seems that the Hardesty intelligence is still functioning, and is giving birth to an idea. Perhaps the lion is not yet pulled down by jackals."

Hardesty whirled. "Maybe. Now look." He turned to a Mercator's Projection map on the wall. His finger described the clockwise circle of the Japan Current from Hawaii up the Oriental coast, east under the Aleutian Islands, and down the American coast. "From Hawaii to the Aleutians, the ascending current is yours and Chiang's, eh, Yamada?"

"That is so," hissed the Japanese in agreement.

"And you're not affected by the order as yet."

"True. The western Americans have use of the Current, somewhat depleted but nonetheless comparatively rich, as it descends the Pacific Coast. As for our side of the Pacific—" Yamada shrugged. "The Oriental races do not have the insolence to assault their betters."

That was true. There would be no demands from the United Orient to divide the Chiang or Yamada seaholdings. Subservience was too long inbred. Besides, small Oriental sea miners could still make what they considered livelihoods because of their age-long low living standards.

Hardesty smiled. "You needn't worry about us asking you and Chiang to divvy up with us. That wouldn't be cricket. Anyhow, my idea'll make that unnecessary."

He strode to the private viso-phone, called Hardesty City on a tight beam. Within thirty seconds he was talking earnestly to Dr. Myles, outlining his scheme, asking questions, checking possibilities and difficulties with the oceanographer.

As the others listened, their eyes grew wider when they grasped the tremendous scope of Hardesty's plan. Then their eyes sparkled as they contemplated its shrewdness. Finally Hardesty broke the connection and turned to his friends.

"Well, you heard Myles say it might be done. What do you think?"

Rousseau had returned with Chiang during the conversation.

"It is a plan of the most astounding, my friend," he said reverently. "Of an epic scope. Truly worthy of a Hardesty. I, Rousseau, say it."

Harwicke chuckled wickedly. "Colossal, my boy. I think we are all agreed on that. Only Jonson will feel some disappointment at missing his beloved fight."

Hardesty grinned oddly at Jonson. "Stick by me, fella. You may get a scrap yet. Only it'll be on our terms and on our battlefield."

CHAPTER IV

Hardesty's Plan

ONCE more they met—the Commission, Judy Vance, Hardesty and his colleagues. Miss Vance was already in the hearing room when Hardesty arrived. When they came together, Hardesty felt the familiar surge of emotion.

"Good Lord," he thought. "How I hate that girl!"

They said not a word to each other. Surprisingly Judy Vance did not gloat. With victory hers, she seemed inclined to sympathy rather than overbearing triumph. But Hardesty gave

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her no chance to speak. He addressed the Commission without preamble.

"You gentlemen have ruled against us. We have two choices—submission or bloody war. If we submit tamely without the loss of thousands of lives, the Commission must permit us to submit on our own terms."

The Chief Commissioner nodded. "We realize you have a billion-dollar investment and that we cannot legally expropriate it without compensation. Nor do we wish a bloody and useless fight. If you and your friends can suggest a reasonable solution, the Commission will gladly aid in its accomplishment."

"Very well. In exchange for our Atlantic Gulf Stream holdings, give us absolute title, with an irrevocable agreement, to worthless holdings of the same extent. We want the Arctic Ocean along the coast of Alaska and around the north Canadian Coast to Hudson Bay. Also the Bering Sea, of course."

The Chief Commissioner blinked. It was a surprising offer. Those northern waters were frozen solid most of the year, totally unfit for aquiculture, and expensive even for mineral extraction. He turned to Judy Vance.

"Surely your party would not object to this?"

No objection. Judy Vance, as Hardesty had counted on, graciously played the role of magnanimous victor.

"In order to transfer our establishments from one ocean to another, it will be necessary to dig a canal," he said. "The almost perpetual storms around Cape Horn preclude using that route. It would be equally impossible to reach Alaska by pushing through the north Atlantic and the frozen Arctic. Therefore, a canal through Guatemala will be required. Will the Commission undertake to guarantee us perpetual ownership of the proper amount of Guatemalan territory?"

The Commission conferred briefly. Obviously they were elated at such an easy solution of what might have been a nasty problem.

"Though no representative of the Republic of Guatemala is present, we feel there will be on obstacles to such an arrangement." The Chief Commissioner struggled not to register doubtful curiosity. "Do you really think you can dig a satisfactory canal clear through Guatemala?"

"Gentlemen, leave that to us. One hundred and eighty-five miles long, one mile wide, and one hundred and fifty feet deep. It shall be done."

The six billionaires wheeled like a military phalanx and marched to the door. As they passed Judy Vance, she caught Hardesty's glance. His face might have been carved from stone. But there was something deep in his eyes. It was the look of a man who has just drawn and filled a royal flush.

WITHIN six months of incredible scientific research and construction—which strained even the resources of Hardesty, Jonson, Rousseau, and Harwicke—they were ready. A half-mile inland from ancient Puerto Cortés, in Guatemala, were a row of enormous mechanical moles, mounted on caterpillar treads. There were twenty of them, spaced so that from end to end the line stretched one mile. They were aimed at the ground.

The tremendous project had been organized with a minimum of publicity. Still, people from all parts of the world were gathered to see its initiation. Hardesty's men, reinforced by International Police, were keeping them back from range of the excavators. Only a few men were inside the restricted space—the machine operators, a few officials, and Hardesty and his friends. Behind a protective shield, Hardesty was explaining to the I.S.C.C. commissioners.

"It's the development of a small invention of Dr. Myles, my oceanographer, and Dr. Conway, my head physicist. They worked out a borer that would rapidly probe the sea bottom to considerable depths. It simply collapses the atoms of soil, rock, or metal. What's left is a hole, of course. It has long been suspected that the character of the omnipresent ether may be subject to change. This theory is the only one which accounts for several otherwise unexplainable physical phenomena.

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"Dr. Conway's digger proves this to be fact. It emits a radiation which materially increases the density of the ether. This slows down the speed of every electron within its field, resulting in their taking up new and smaller orbits. The end result is collapse."

He signaled. The excavator men scattered to their respective machines, clambered into lead-protected cockpits. The whine of atomic motors filled the air. Another signal, and all twenty batteries emitted waves of radiation. A great cry arose from the distant watchers on the hills and those hovering recklessly close in helicopters and rocket cars.

The Earth itself seemed to be disintegrating before their very eyes. Soil and rock collapsed wherever those rays struck, compressing instantaneously to form an extremely firm flooring. Over it the advancing tractors moved easily. A great blaze of heat and light drove Hardesty and the officials behind the shield.

"Great release of energy," shouted Hardesty. "Mostly in the form of light, heat and X-rays. This occurs because the electrons in each atom are going from an outer to an inner energy level."

The mighty machines moved forward relentlessy, the muzzles of their "guns" pointed downward to dig a slanting path. When they reached a point one hundred and fifty feet below sea level, their course leveled off. The Earth appeared to crumble, settle, and dissolve before their blasts.

"So long as we don't have to annihiate any mountains," cried Hardesty above the clamor, "we can dig about as fast as the tractors can move. By paralleling closely the southeastern Guatemalan border, we meet only one narrow range, not too high. Slow and ticklish work there, but we'll make it. We can regulate the effective distance of the radiation up to an ultimate of four hundred yards. When we tackle the mountains, we can work from a safe distance."

The Commissioners shook their heads and muttered dazedly. It was a project calculated to stun any mind, yet this young man Hardesty was apparently taking it in stride.

BACK in the North Atlantic, another tremendous task was going forward under the direction of Dr. Myles. Hardesty City and the other three similar developments were systematically being broken up into maneuverable units.

Old Galen again had his favorite AG rocket moving with incredible precision along predetermined geometrical patterns above the City. His proton cannons were blasting. Though he was blinded by tears, he would entrust to no one else the duty of slashing apart the mighty pontoon city which had been his home for many years. That delicate job was only for a master hand.

Below, the extraction plants, distilleries, and generators all were silenced. Equipment was being stowed away for the long journey. All production activities had ended. Workmen busily installed atomic motors and Alvan Processors to each unit of the broken city.

Finally after months of furious labor, all was ready for the Great Pilgrimage. From Guatemala came reports that the canal, at the cost of two hundred lives, had been completed. The seas were joined!

So Hardesty City began its fantastic hegira, piece by piece. There was an aura of weird unreality about it all, as if gigantic motion picture sets were being moved into place. Down the coast of eastern America they moved with awkward majesty. Then a quick dash across the Caribbean was executed before any devastating hurricanes could reach them in their defenseless condition.

Through the canal and up the endless Pacific Coast they sailed, hugging the shore line. Two violent storms attacked them, but each time the Alvan Processors calmed the seas. Nearby headlands protected them somewhat from winds which might have capsized an ungainly strip of buildings higher than it was wide.

Eventually the strange procession slipped safely through the Aleutian Islands and into the Arctic. One by one of the piecemeal cities took their new positions. First, Hardesty's was set up in the Bering Sea, then Rous-

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seau's, Jonson's, and finally Sir Cecil's.

Harwicke found himself far around toward Hudson Bay when he gave the order to drop anchor and weld the city. Only because it was late in an unusually mild Arctic summer had the expedition been able to penetrate those Arctic waters without mishap.

When the tremendous salt-water trek was finally accomplished, the entire world applauded the brilliance of the achievement. Hardesty was regarded not only as benefactor to suffering humanity, but as a genius and leader without peer. This gave Hardesty some moments of bitter amusement.

"I've done those poor bowlies a service, all right. I've saved them from themselves, only they don't realize it yet. Wait and hear what they call me next spring, when the new sea-rush begins. Just wait!"

SPRING, 3040, was at hand. With it came the greatest peacetime event of economic significance within the memory of living man. The second sea-rush was about to begin. The Gulf Stream was open to public claim.

Young Hardesty and Thomas Jonson, with Dr. Myles and Galen in the main Hardesty rocket ship, were watching the tele-cast of this epochal occurrence. The scene was the northern shore of America. It was packed like sardines with sea-going craft of every conceivable nature.

"Thousands of boats, rockets, sea-sleds, and even powered metalorafts, folks," cried the announcer's excited voice. "They're all waiting for the signal that'll start them in the race for the choicest positions of the fabulously rich Gulf Stream. Months have been devoted to the selection of those permitted to enter this race. Only the genuinely poor bowlies can compete. Rich operators trying to enter dummy competitors have been carefully weeded out. There'll be no chiselers here today.

"Claims will be staked according to custom by a buoy, and will be half a mile square. Each buoy has a Government-sealed, untamperable timepiece, which starts only when the buoy is anchored firmly on the chosen spot. Future arguments as to priority, then, will be quickly settled.

"Ordinarily, of course, open-sea mining would be impossible for these people. It's been made feasible, however, by two things. First, the Stream will afford cost-free power to operate the necessary Alvan Processors. And secondly, the Government will provide Processors, on long-term loans, to all successful claimants."

The speaker continued to describe the picture. He blurted out the local color, the background of centuries leading up to this moment. He compared the present event with the Oklahoma Indian Territory land rush.

"It's an unusual year in more ways than one, folks. Europe is just digging out from her severest winter in two decades. So far there have been no bird migrations to speak of. And there've been rumors about peculiar behavior of the Gulf Stream. These are only rumors, of course, since the Stream has been absolutely closed to

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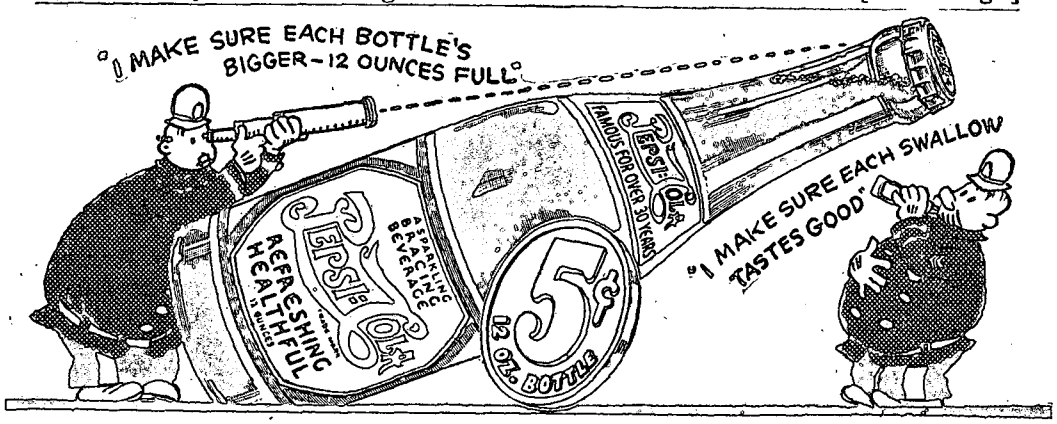

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any traffic since departure of the seaholders. Still, it seems almost as if nature herself was trying to record this great—"

There was a simultaneous roar of many cannons, from near and far.

"That's it! The signal! And there they go!"

The television screen showed a madhouse sight as thousands of eager racers drove straight out to sea with a single-minded purpose. Many never surmounted the first line of breakers. It was dog-eat-dog and devil take the hindmost. Bitter fights broke out every minute, when racers collided in the jam. If some unfortunate went under, few would stop and help.

Coast Guard helicopters dipped and fluttered. Rescues by the dozen were made.

Just within range of the telecaster was a rickety amphibian rocket. Someone had managed to rent the old ship on his prospects of locating a rich claim. Before it was a quarter of a mile off-shore, it blew up. Life and hope alike were swallowed by the sea. Hardesty tuned the scene out.

"Not pretty, is it?"

No one spoke for awhile. Then Jonson ventured a choked remark.

"It won't be long now."

"Yes," Hardesty agreed. "We'll know one way or the other in a few hours. Hell is about to pop!"

CHAPTER V

Defeat Is Triumph

THE hours ticked away. Hardesty sat calmly reading. But Jonson paced nervously from port to port, staring out at the Guatemalan jungle on one side, or watching the smooth flow of water in the huge canal on the other. Dr. Myles tried to play cards with Galen.

When the private v i s o-p h o n e buzzed its sharp call signal, everyone jumped. Hardesty pushed the switch. The face of Judy Vance sprang to furious life Her eyes were blazing, with alarm as much as anger. Without a moment's hesitation she and Hardesty were shouting again at one another.

"You t h i e v i n g, doublecrossing crook!" the girl cried. "You—"

"You ignorant red-headed firebrand!" Hardesty yelled. "I did it for your own good, to keep you from ruining your own crowd! If you only had the sense of an eight-year-old, you'd appreciate—"

"Your cheating has driven them crazy! I can't do a thing with them!"

For a moment both voices screamed together in angry epithets. Then Hardesty slammed the screen to darkness again. He turned, apologetic.

"That girl makes me forget myself. I never met anyone I so thoroughly detest. . . . Well, what's so funny?"

Dr. Myles smothered a grin and discreetly said nothing. The call buzzer rattled again, several times. This time it was the I.S.C.C. chief.

"Ah," murmured Jonson. "Here it comes at last. The Great Stone Face seems to be slightly upset."

Indeed, the usual calm demeanor of the Chief Commissioner was wiped away in an expression of dazed, bewildered astonishment.

"Hardesty!" he bleated. "What's happened out here?"

"Your blunderingly idiotic Commission ruled us out of the Atlantic Gulf Stream. At the same time they practically guaranteed economic ruin for the people you wanted to help. So we took it into our own hands to save you from your folly. Dr. Myles, here, will explain what has been done."

Myles stepped before the screen.

"The Gulf Stream makes its clockwise circle of the Caribbean, gathering its cargo of riches. Protected from exploitation by continual hurricanes, it caroms off the Guatemalan coast at the precise point where the Hardesty Canal now begins. Hence, the Stream now divides. Half of it, three million cubic feet per second, drives straight through the peninsula to join the Japan Current.

"This augmented Japan Current is now so powerful that it no longer is turned completely by the Aleutian Islands. Instead, it also divides, half of the warm stream shooting on up the Alaskan coast and around toward

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Hudson Bay. Those formerly frozen waters are now ice-free the year around. The temperature of the already warm water of the Gulf Stream increases another five degrees in its day and a half trip through the canal to meet the warm Japan Current.

"So Messrs. Hardesty, Jonson, Rousseau, and Harwicke are once again situated on the warm ocean currents. As the expression goes, they are sitting pretty. And they intend to keep sitting that way."

"But—but—" the Chief Commissioner spluttered indignantly.

Hardesty pointed out some cold facts. Absolute and irrevocable title had been given him and his colleagues to their northern holdings, and to the canal right of way. No objection had been made by anyone to the proposal. It was all strictly legal.

"A good portion of the Gulf Stream still follows its original path. It should be sufficient for any but the most greedy. No one can say we haven't done our best to avert strife. If it comes, we are on the side of lawfulness."

HARDESTY ended the interview by darkening the screen. He looked weary.

"God knows I don't want war. The fact that the bowlies have some justification on their side makes this a nasty dilemma. I've tried to solve it the only way I know, by sharing with them. . . . But if we're forced into a fight, at least we have the advantage this time. If we had fought before, it would have been hopeless. Now, if anyone intervenes, it must be in our behalf. We have the law with us."

Jonson nodded. "I see what you meant that last day in the Commission hearing room."

Within twelve hours they had the bowlies' answer. It was a hundred-pound hydroxyl bomb, aimed to destroy the mouth of the canal.

Ten minutes later the northern sky was black with ships. Dozens of the most fantastically ancient rocket cars, totally unarmored and unfit for battle, were piloted by bowlies. Without the faintest idea of proper maneuver and tactics, they drove forward recklessly, seeking to dump tons of HE to blast the hated canal out of existence.

Hardesty sighed, gave the signal to battle stations. Scattered along the length of the canal were his slim fighting forces. Most of them were concentrated at the Caribbean end. Though they were small in number, all were trained fighters, equipped with the latest in interceptor-pursuit rocket ships. Jonson scurried to his own ship, eager for battle.

The tiny group of defenders blasted off to meet the enemy hosts. Using their superior speed and agility, they easily avoided direct hits by their opponents' crude weapons. Spinning, diving, looping, they weaved intricate patterns throughout the massed flight of rattletrap bowlies' ships. Proton streams stabbed viciously.

Strangely, though, the casualties were few. Acting on Hardesty's instructions, the defenders concentrated only on disabling the enemy ships, forcing them down before they could come within bombing range of the canal. Their strategy was to slip behind an unsuspecting ship and destroy the rocket tubes with a quick blast. This left the bowlie pilot no choice but to spiral down on his stubby wings and try to find a soft landing spot.

From his observation point above the battle, Hardesty thought it looked like a comic opera war, in which no one ever gets hurt. But mid-air collisions suddenly accounted for three of his men. They plunged Earthward in their flaming silver coffins. Some of the bowlies were also crashing to their deaths. But they were victims of poor piloting. They often drove directly into the defenders' proton blasts and had their ships wrecked, instead of just the tubes.

After a savage running battle, the invading fleet seemed to have been reduced by half. It was obvious that some of them were managing to filter through by sheer weight of numbers.

Hardesty's attempt to fight mercifully was a terrific handicap. Tremendous detonations began to rack the air as hydroxyl bombs struck the canal.

Anti-aircraft fire stammered into action. Then blood was shed in ear-

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nest. There was no time to do anything but fire hastily at the diving ships and quickly duck.

INSIDE his own AG ship, Hardesty's face grew more tight and drawn as every minute passed.

"This is bad," he muttered to Galen, who was obviously aching to get into the scrap. "I hoped to discourage those fools, whip 'em in this first thrust so they'd fall back and think things over. Once they do that, they're sure to come to their senses. They're in a fanatical rage right now. That will wear off, though. But if we're forced to shed much blood before they do snap out of it—" He shook his head worriedly.

In their own defense, Hardesty's men would soon be forced to fight back in total war. It would be kill or be killed. A terrible and bloody war would inevitably be started.

He signaled Galen down into the fight to aid his thinning ranks. Like a hawk after a pigeon, the big AG plunged. Quickly, they spotted a lone bowlie scurrying low over the canal. He was followed by a leaping spray of exploding Earth as he stopped a string of bombs along one bank. Doom caught him unaware.

Galen slipped deftly up beneath the enemy's tail, in his blind spot. Hardesty's marksmanship left the invader's rocket tubes a fused, molten mass.

The pilot reached for the ignition switch, hoping to glide to safety without power. But he was too late. The bowlie ship shuddered as the rocket blasts went off inside the hull. The rattletrap spun end over end, streaming flame like a pinwheel, then vanished abruptly into the canal. Water boiled. Steam arose in a swiftly dispersing cloud.

Hardesty groaned aloud at this misfortune, then directed Galen back along the canal. It was showing wear and tear, especially at the Caribbean end, where it had been half-filled in by repeated bombings. It was nothing that the mechanical moles couldn't repair in time. But it was beginning to look as if there would be no one to use the moles for a long time to come. If the battle got further out of hand—

Young Hardesty was not a religious man. Yet in a fumbling way he offered up a brief but earnest prayer that the carnage might somehow be stopped before it was too late.

And, as sometimes happens to the deserving, a miracle did occur.

It was heralded by the warning light and buzzer on the viso-phone, both of which went into a frantic dance. A fuse blew out. It was automatically replaced, before Hardesty managed to turn the switch. The screen was a wild blur of distorted images and the loudspeaker howled with static. Someone was blanketing out all wave lengths, intending to tune in with an all-frequency broadcast on every receiver within hundreds of miles.

Hardesty glanced at the sky above. As he suspected, a gigantic spaceship hovered near the stratosphere. It was so large that its identifying color could be distinguished even at that distance. It was an official Government ship.

"I reckon Stony Face'll be wantin' a word with us," hazarded Galen.

THE old pilot was right. The screen quickly resolved into the features of the Chief Commissioner of the I.S.C.C. For the second time to Hardesty's knowledge, the man was registering the extremes of emotion. This time it was wild with excitement.

"Hardesty!" he shouted. "Bowlies! All of you, down there. Stop the fighting. There's no longer any cause for war!"

Battle sounds dribbled away to silence as everyone warily digested this statement. The muted stuttering of countless rockets was the only noise. The Commissioner took advantage of the temporary truce.

"Miss Judy Vance has been with me the last few hours, checking on an incredible report. Just so you won't think I'm trying to deceive you, I shall have her tell it to you herself."

Judy Vance stepped into view on hundreds of the belligerents' screens. Her eyes were shining. Words tumbled from her mouth.

"It's true! Something wonderful has happened. Reports have dribbled in from the Arctic regions all winter.

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At first no one paid any attention. Then it suddenly dawned on somebody that an amazing transformation was taking place in the frozen north. It was confirmed just before the rush began. The Commissioner and I have just returned from checking it!"

She paused to catch her breath.

"There *is* no more frozen north, men! Snow fields have melted. Glaciers have begun to dwindle. There hasn't been a serious storm all winter along the northern Alaskan and Canadian coasts. Hardesty's canal, by turning the warm current up over the mically in fiery triumph.

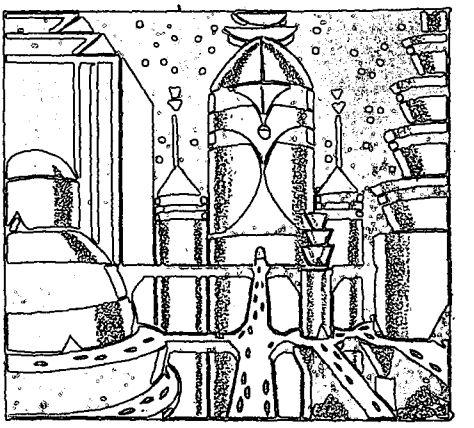
"Hardesty," came the girl's voice once again. "Oh, Hardesty! If you're listening, please come up to the Government ship. I want you to see for yourself the wonderful thing that's happened."

YOUNG Hardesty and Judy Vance peered through the floor port of the Government clipper. Down they stared at the miraculously changed face of the North. Dr. Myles was with them, shaking his head in astonishment. He muttered dazedly about

The Golden Age of Science!

A DARING PREVIEW OF FUTURE MAN'S LAST STAND AGAINST TYRANNY IN

THE DAY TO COME



A Complete Novel of Subterranean Conquest

By DON TRACY

o

IN OUR SPECIAL SCIENTIFICTION NOVEL SECTION NEXT MONTH

top of the world, has changed the climate entirely. Millions of acres of rich, black land have been opened up for almost year-round farming.

"Quit this fight, men. Hardesty has given us something much more precious in exchange for his Gulf Stream. Back to the soil, men, and take up again our true heritage. It's ours just for the asking!"

Judy Vance's voice was ringing with joy. Its emotion captured her listeners. From all over the miles of aerial battlefield arose the roar of joyful shouting. Rockets blasted rhythtemperatures and equalization of barometric pressure.

Hardesty watched tiny, distant figures of the bowlie vanguard arriving in their battered ships. Almost to a man, when they put foot again on virgin soil, they knelt and scooped it up ecstatically between their hands. Joyously they reveled in its warm richness.

No longer were they a lost legion. They had come into their own once again!

"It's ironic that we should be the last to realize what's been going on

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right under our noses," Myles said. "Hardesty City isn't five miles off the coast. Yet we were all busy putting the City back together again and preparing for a fight. We never even spared the time to— Hey! Isn't anybody listening?"

No one paid him the slightest heed. Hardesty and Judy Vance were looking into one another's eyes.

"I'm so glad it turned out this way," she breathed. "I realized all along that you were partly right—"

"And I knew you were only trying to help those unfortunates—"

They stopped, searching awkwardly for words. Then Hardesty said a few that could fit together.

"It's funny. Right from our first meeting, every time I saw you I got all mixed up inside. I thought it was anger at a red-headed upstart. But I guess now maybe it was something else, huh?"

Judy Vance smiled in the immemorially cryptic way of a woman who has found the one man she was seeking.

THE PAST LIVES AGAIN
IN
THE TOMB OF TIME
A Complete Novelet of Magic Life
By ROBERT ARTHUR
NEXT MONTH

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Try Thin Gillettes—ten cents for four!
They whisk through stubble extra quick—
You look well-groomed—your face feels slick!
New kind of edges on steel hard enough to cut glass!
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ONE WAY STAR RIDE

By ROBERT MOORE WILLIAMS

Author of "The Eternal Light," "The Bridge to Earth," etc.

An answering bolt came stinging back

Traveling Faster Than Light Is Deadly Poison—Unless You Accidently Happen to Bring Along the Only Antidote!

SOMEBODY kicked the door open. I had been sitting on the edge of my bunk, talking to Ed about whether I should call Marcella or Geraldine for a date. I had about made up my mind to call Geraldine, who is as cute a little blond trick as a lieutenant, junior grade, is likely to meet in many a moon. But Ed had been favoring Marcella. He had a weakness in his iron heart for Marcella ever since she oiled a creaky joint for him one day, after he had been out in the rain. Besides, not being a gentleman, he prefers brunettes.

Ed is my bat-boy. He is also a robot, with a serial number as long as your arm, which I can never remember. So I call him Ed, and he likes it. Everybody who can beg, borrow, or steal the

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necessary credits owns a robot. Ed takes care of pressing my pants, sees that my brass buttons are shiny, runs errands, and generally makes himself useful. Also, he helps me with my love affairs, whether I like it or not.

"You call Marcella, Boss," Ed advised me, looking as solemn as if he knew what he was talking about. "You marry her, Boss. She make swell wife."

"What the hell would I use for credits, metal-brain? Wives use up large chunks of spending money. You can't understand how promotions are in the Space Patrol. It may be years before I have a rating that will enable me to support a wife, and you know it."

Of course he didn't know it. Ed can press a mean crease in a pair of pants. He never forgets a number, and he can police your quarters till they shine. But after all, he's only a robot. He's one of the latest models, so he talks pretty good, but even the best robots have limits. Understanding credits is beyond their mental capacity. And I couldn't understand why I never had his memory and my love-life cut out of his brain, except that then he'd have needed a whole new brain.

"Don't get credits, Boss," Ed answered. "You call Marcella—" he began again, repeating his speech like a parrot.

That was when somebody kicked my door open.

I looked up. Pinky Wilson stood there. He didn't look so good.

For one thing, his uniform was torn. There was a hole in it, high up on his left shoulder. Obviously the hole was not only in his uniform but in Pinky, also. There was a gash down the side of his face that looked like it had been made by the sights of a proton pistol. Blood was running from it. His cap was gone. Just at the hairline on his forehead there was a lump as big as an egg.

Pinky was usually immaculate. The sight of him in his present disarray surprised me so much that all I could do was sit there and gawk at him.

He came into my room. The way he did it is not to be recommended. He took one step and his legs folded up under him and he sprawled full length.

"Ugh," he said.

BY then I knew that something was plenty wrong. I knew it as soon as I saw Pinky, but I was so shocked that I couldn't react. As I slid down beside him and lifted his head in my arms, he gasped out a sentence that paralyzed me completely.

"Bud," he said. "Blackworth's here!"

In 2860 A.D., the big bad wolf had gone out of style. Nobody gave a damn about wolves any more. Children just laughed when their mothers told them they had better be good or the big bad wolf would get them.

But there wasn't a child anywhere in the Solar System who wouldn't be good for a week straight if his mother as much as whispered the word "Blackworth" in his presence. Even babies knew about him.

He was a pirate. Not the swashbuckling, heave ho and a bottle of rum kind of pirate, but a soft-spoken, nerveless, chilled-steel devil. He didn't sail the Spanish Main. His ocean was space, and everything that crossed it he considered his proper prey. The Patrol had chased him from Pluto to Mercury and back again. We had blown up a dozen different bases in the asteroid belt, smashed his organization again and again. But we hadn't smashed him. He had a genius for escaping traps that was positively uncanny.

At some time in his grimy past he had been a first-class scientist. He still knew what made the wheels go round, but he no longer used his knowledge of science to benefit anybody but himself. "I'll get mine," was his motto. "To hell with the rest of you."

I guess he was a kind of throwback, a man who belonged to the past when might ruled the world and everybody knew what a dictator was. We don't like to remember that world any more. We might have succeeded in forgetting it if Blackworth hadn't kept reminding us.

Damn him! When I think of what he did to the crew of a Patrol boat he once captured, I start boiling all over again. The ship had had a misunderstanding with a meteor and landed on an asteroid for emergency repairs. His only excuse for killing those men was that he hated anybody who wore the insignia of the Patrol.

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"How badly are you hurt?" I demanded.

"Hell, I'm all right—" Pinky snarled. "Don't bother about me—Blackworth's here—He and four of his men—jumped the gang in the—experimental hangar—Sound a general alarm—"

That was as far as he got. He coughed. Blood spewed from his lips.

He died in my arms.

There are times when you're both cold and hot. This was one of those times. I was burning up inside, but icy sweat was pouring out of my skin. I had known Pinky Wilson ever since we had been cadets together. I bunked with him, fought with him, drank beer with him, sweated over exams with him. Now I was sweating alone, sweating as I had never sweated before.

I laid Pinky gently on the floor and grabbed the visaphone, to call the Patrol.

The instrument was dead. I didn't have to think to know what happened. Blackworth had smashed our transmitting station.

As I stood there jiggling the hook trying to get a connection, I heard the starting howl of atomic motors. The sound froze me. It came from the direction of the experimental hangar.

There were two ships in that hangar. They were the most important ships in the Solar System. They were two experimental jobs that Marshall, their inventor, claimed would reach a speed no other ship had ever attained. That was plenty of reason for Blackworth to want one of them.

THAT was why Pinky and I and a company of Patrol men were down here at this little landing field just out of New York City—to protect those ships. We were to test them, eventually, when they were ready for their final test. But in the meantime, we were supposed to protect them at all costs.

And somebody was warming up the motors of one of those fliers.

I need only a second to grab my proton pistol and get out to the landing field. Ed came lumbering along behind me. He didn't know what was happening but he came long anyhow, just to be close to me.

I got outside in time to see a flier come poking out of the hangar. It shot up into the air as the anti-gravs took hold. Motors thundering, it raced into the sky. In seconds it was only a black dot. Then it was gone from sight.

It was one of our experimental ships.

Blackworth had his ship.

There were dead men in that hangar, and some that weren't dead. Blackworth's gang hadn't wasted any time in argument. I didn't waste any time, either. Somebody else could take care of those wounded men. My job was to follow Blackworth, to hell if necessary. He simply couldn't be permitted to make a getaway with one of those new ships. Our order to protect them at all costs meant exactly what it said. There was a mighty good reason for that order.

I yanked open the lock of the second flier and hurled myself into the pilot's seat. Ed came along, too. I shouldn't have let him go, but I didn't have time to send him back. He would obey me, of course, after doing some arguing about it. I don't know who taught him to argue, but secretly I rather liked it, as well as his doglike devotion. So I let him come. It turned out that it was a good thing that I did.

When the ship lifted as the power took hold, I started to guide it out of the hangar. A man crawled across the floor and got in my way. I motioned to him to get the hell out of the road and let me pass, but he wouldn't do it. Then I saw who it was.

Marshall was the man who had invented the drive we were using in these fliers. His overturned wheelchair was lying off to one side. No, he wasn't wounded. He was a cripple with bum legs. It always seemed odd to me that a man who couldn't walk would be the inventor of the fastest ships that ever flew. But the phychologists say that was the way he compensated himself for the legs he didn't have.

He wouldn't get out of the way and let me pass. I couldn't slip out of the hangar without rolling the landing wheels over him. So I got out and carried him into the flier. That was what he had wanted all the time.

"Okay, Lieutenant Cranston," he said. "Let her roll."

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Marshall might have been a cripple but he had more courage than a lot of able-bodied men I've known. He knew the risks we would have to take. Hell, he didn't care. He was going along.

When we got the flier into the sky, the stolen ship was out of sight. We would have lost the race right then if our ship hadn't been a standard Patrol boat, with magnetic detectors. It had a new—and untested—drive, but otherwise it had standard armor and equipment.

The magnetic detectors picked up the ship Blackworth had stolen. It was already half-way to the Moon.

NOW, don't tell me no ship could move that far in the five or six minutes that had elapsed since it had taken off. No standard ship could, but these ships weren't standard. They were experimental jobs. Ninety-nine per cent of the scientists had said they wouldn't work.

Marshall never gave a damn what ninety-nine per cent of the scientists thought. He said his drive would work. The Patrol thought he was probably cock-eyed, but just the same we couldn't afford to take a chance. His drive might work. And if it did—

You figure out what faster-than-light flight would mean.

The human race had had space ships for over seven hundred years. We no longer used clumsy rocket fliers either, which were likely as not to blow up in space or smash in landing. Our ships now had good, honest atomic power to make them tick. And they ticked all right, all over the Solar System. There were colonies on Mars and Venus, and outposts on the moons of Jupiter, and laboratories on Pluto.

It was swell business. But what about the stars? Think about old Jake Marshall. A helpless cripple, he used to sight at night with his drawing board across the arms of his wheel chair—and look out at the stars. He couldn't walk across the room—but he dreamed of star-flight. Out of his dreaming came what might turn out to be the Marshall faster-than-light drive. Or it might not be. We hadn't tested it yet.

Sure, I know Einstein said that an object moving at the speed of light would have infinite mass. His equations proved it. But Jake Marshall knew a thing about equations, himself. He didn't deny Einstein's figures.

"Here's how we get around that," he merely said.

Marshall had seen the stars. That's what faster-than-light drive meant. No more crawling around the Solar System like bugs around nine rotten potatoes. Wings for the bugs, wings to reach the stars!

I could have killed Blackworth with my bare hands.

What if Marshall was right and these ships would actually travel faster than light? Such a ship would be a nice little thing for a pirate to have. He could raid New York and grab what he wanted. By the time resistance was organized, he would be back in the asteroid belt. It's no distance at all around the Solar System if you can travel faster than light. Sure, the Patrol would catch him in time. The crook simply can't beat society in the long run. But there might be hell to pay before we did capture him.

It all boiled down to one thing. I had to catch that flier up ahead of me. Pinky and I had been sent down to guard it, and we had failed. Probably we had grown careless. There was no danger, we had thought. Blackworth wouldn't dare show himself on Earth.

But he *had* dared.

By this time the Patrol was yammering at us over the radio. Somebody had got an alarm through, back there on Earth. All over the System, Patrol vessels were taking off.

"His destination is probably somewhere in the asteroid belt," Marshall suggested. "He possibly has a secret laboratory there, where he can disassemble the drive and determine how it functions."

I passed his suggestions along to the Patrol. We had a couple of bases in the asteroid belt, and the boys would do the best they could to head Blackworth off.

The Moon was already far behind us.

"What do this for, Boss" Ed said. "You call Marcella—"

Ed just couldn't get it. I snarled at

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him and he crawled into a corner and sulked.

BLACKWORTH was heading for the asteroid belt, all right. And was he making speed! He knew we were right behind him, so he was opening his ship up. I looked at the speedometer. It showed we were already doing over four hundred thousand.

I began to feel a little sick inside.

The next time I looked down, the red hand on the meter was over the six hundred thousand mark. Per hour, of course.

"She's warming up nicely," Marshall said.

I gulped. I had never traveled this fast before.

"I think the drive is ready to carry the full load of the atomics," Marshall said. He consulted the instrument panel. "I like to warm it up slowly. Yes, it's ready. Just push the red button."

He was damned cool about it. I pushed the button. Instantly the atomics howled in pain. Although our acceleration was supposed to be completely neutralized by the anti-gravs, I could feel the flier spurt forward. That was odd. You're just not supposed to feel the acceleration.

Then I looked down at the speedometer. It almost scared me out of my socks.

It was over the million mark, and still going. No wonder I could feel the acceleration.

"Why don't you let me handle the controls?" Marshall asked. "You operate this gun. Look!"

He pointed. Our sudden spurt of speed had brought us up even with the fleeing pirate. It was so near that we could see his ship. It was within easy range of the proton blast gun our ship mounted.

Marshall, of course, knew how to operate the controls. Being a civilian, he didn't know much about guns. But he had the right idea. I was there to do the fighting.

I lifted him into the pilot's seat, slid myself in under the gun mount. All at once, I snapped off the safety switch, swung the gun around, and let her go.

The blue bubble of lightning streaked toward the other ship—and missed. But at the speed we were traveling, misses were likely. I fired again.

Ed was peeking through the port, trying to get this monkey business through his head.

"You singed him that time, Boss," he gloated.

And I had. It wasn't a square hit, but it sent electric fire swarming all over the other vessel. One more shot and Blackworth would pay for his sins. I lined up the sights again.

Blooie!

An answering shot came stinging back. This was a game that two could play. Blackworth had discovered us. But his first shot passed so near that I swear I could hear the ether hiss. Witch-fire danced over the inside of our vessel. Static electricity leaped from instrument to instrument. That display would have been beautiful if it hadn't been so agonizing.

"Ugh!" Ed said. "Iron too hot, Boss. Burn pants."

The damned fool seemed to think this was a trouser-pressing bee.

MARSHALL kicked us over into a dive. The atomics howled until I thought they would tear their insides out. By the time I had my sights lined up again, Blackworth had apparently discovered how to get full speed out of his ship.

It vanished so fast that even the magnetic detectors had all they could do to trace it.

"Hold on, Lieutenant," Marshall said quietly. "Here's where we take a ride."

I didn't know it then, but this was due to turn into a one-way ride with no return ticket in sight.

We had scared Blackworth. He probably thought we were just an ordinary Patrol vessel that had spotted him coming and had waited for him. In that case, all he had to do was run way from us. He proceeded to try just that.

We went past Mars so fast, the darned planet looked egg-shaped.

Blackworth headed for the asteroid belt, all right, but scout ships were already out there. We were right behind him. Moreover, we had our detectors locked on him. Even if he tried

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to sneak into a hole, we would know where he went.

He didn't try to hide. He lifted up over the asteroid belt.

We followed right behind him.

The needle of the speedometer was so far over that I didn't dare look at it. Even old metal-brain Ed was beginning to look uneasy. He acted as though he had smelled a pair of burning pants and was afraid he had scorched one of my uniforms and was due to catch merry hell for it.

Marshall never turned a hair. He just sat there in the pilot seat and kept turning more juice into the main drive.

I was beginning to have a lot of respect for that little scientist. Members of the Space Patrol are supposed to be hard-boiled hombres. We are. But here I was, shaking in my boots, and Marshall looked like he thought we were out for a joy-ride.

Three patrol ships were blatting at us from out around Pluto.

"Head him our way, Cranston," they begged. "We'll fix his clock."

"He's already headed your way," I answered. "Help yourself to his clock."

We weren't trying to be funny. On the other hand, we knew better than to be serious. When you're out there in space, watching the worlds go by, seeing black nothingness leering at you from every port, you know you're playing tag with the old man with the scythe. Any minute he's likely to put his hand on your shoulder and say:

"Tag, Buddy, you're it."

You just can't let yourself be serious. If you did, you'd go nuts.

A couple of hours later, Blackworth passed Pluto. We followed right after him. We passed those three ships that had been bragging that they could fix his clock. They looked like they were going backward. They were speedy vessels, too, but they just weren't in this race. They wailed at us over the radio.

Then the admiral himself came on. He's the only man in the fleet who can afford to be serious. He didn't wait to pass the time of day.

"I'm holding you personally responsible, Lieutenant. You permitted Blackworth to steal that ship from right under your nose. If you let him get away, I'll tear up your commission with my own hands. Do you understand me, Lieutenant? Recover that flier at all costs!"

"Yes, sir," I answered.

Sometimes the old man is kind of tough. This was one of those times.

Hell, it wasn't my fault. I had been off duty, but you don't tell things like that to the admiral. Anyhow, I was mad as hell at being told what to do. Pinky had died in my arms.

WE headed out into space, still building up speed.

Even Marshall began to get worried when he saw what was going to happen. I caught him watching the speedometer more than he had any right to, and his eyes kept flickering over the ship in little nervous jerks. But he didn't say anything. Even though he knew what was going to happen, he kept pouring in the juice. Giving her a little more all the time, he was edging her along faster and faster.

Out ahead of us, Blackworth was doing the same thing. He didn't have a hideaway to duck into and he didn't want to stop and fight if he could help it. So he did the only thing he could do—he tried to outrun us.

That meant that sooner or later he would have to go beyond the speed of light. And if we were to catch him, we would have to do it, too.

Remember that these ships hadn't been tested. We had run them out to the Moon and back, just breaking them in. But we hadn't tried to get everything out that was in them. We hadn't wanted to. We were too scared of them.

I got to thinking. What if Marshall was right? What if these fliers could move as fast as light or faster? What would happen then?

Nobody knew. Nobody had ever gone that fast, or anywhere near it, or cared to try it. A very respectable body of scientific opinion said that the speed of light was a limiting velocity, that nothing could go faster than that.

But that's exactly what we were going to have to do.

"Well, we're in outer space now," I thought. "Nothing to run into out here."

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It was a pretty sour consolation.

The magnetic detector tinkled and almost quit registering. I looked up ahead, but I couldn't see the ship we were following. It was too far away and moving too fast.

"He's gone over," said Marshall. "That's why the detector has almost lost him. The spurt he got when he passed the speed of light has put him a long way ahead of us."

Cold sweat was running down over my forehead. I wiped it away and tried not to wonder why my hand shook.

"Hold tight." Marshall said. "We're going over the top."

The little devil had the heart to grin. I grinned back at him.

Then we went over.

ONE second the atomic generator was howling as it fed incredible energies into the drive. Then it seemed to race free for an instant, like a motor that has suddenly lost its load. Abruptly, it hummed again, softer now, easier. It sounded like a car that had been laboring to climb and had reached the top and was coasting along on level ground.

I got the sensation of a violent spurt forward. It was just as if we had suddenly cast off an anchor we had been dragging.

I didn't even feel the agony start. It came too quickly for that. Nerve current travels at a poky crawl. We were over the speed of light before I really knew I had begun to hurt.

That pain felt like every molecule in my body, every atom, was doing a complete flipflop. That's just what it felt like—a turnover of everyone of my body molecules. Billions and billions of molecules were turning over all at once, all of them telegraphing unbearable flashes of agony to the brain. It was a vast chorus yelping that something was wrong.

Slowly it subsided, leaving me with the definite impression that everything was wrong.

I looked out the port. In front of us, black space leered in the light of a million stars. Behind us was a sort of a gray mist that looked like light trying to catch up and not quite making the grade.

I DIDN'T know what had happened. I couldn't know. A sound attracted my attention. I turned from the port, saw a spindley little guy sitting in a funny looking chair. He was staring from the ports.

He tried to rise—and fell flat. There was the most amazed, fretful expression on his face when he looked at his legs. He couldn't understand why they didn't bear his weight, as if he had forgotten that his legs were paralyzed.

Yeah, that's the way he looked. He had forgotten that his legs were no good.

Forgotten. That's the word. Forgotten.

We didn't know it then, but the instant we crossed the speed of light, every molecule in our brains had turned over in a crazy dance. When they all settled down again, they didn't resume their original position. Our nerve synapses were broken by that flip-flop. The result was complete amnesia, complete loss of memory. Blindness would have been better. Even death would have been preferable.

We didn't even know any words. Oh, there were vague, fleeting impressions flashing through our minds, like ghosts coming and going. But they never stayed long enough to be grasped.

The spinal column and the lower nervous system still functioned, so we knew how to walk and how to make sounds. But we didn't know what the sounds meant. We probably knew as much as six-month-old babies, but no more than that. I could still pilot a ship because my muscles knew how. They knew how to move levers and punch buttons, the result of habit that had been beaten into my blood and bones.

I didn't know what the instruments on the panels meant. The needle on one instrument was way past a red mark. But I didn't know that this was a speedometer, and that it was telling me that we were hurtling away from the Solar System faster than the speed of light.

We had tested Marshall's drive, and this was the result—

We were running away from our worlds, from old mother Earth that we called home, so damned fast that light couldn't keep up with us. We were go-

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ing to the stars, with a vengeance.

And we would keep on going, even after our fuel played out. There was little gravity to slow us down. We'd keep on traveling until we ended up in some sun.

Nice place to die, the flaming surface of a sun.

But the sun nearest our position was Sirius and we'd be dead of starvation long before we reached it. Even light needs about eight years to reach Sirius. All we had to eat was standard emergency rations for two weeks.

Good-by, Earth. Good-by, you lugs in the Space Patrol. Good-by, Marcella.. Good-by, Geraldine. I'm going for a ride over toward Sirius.

The ship drove on. We didn't know how to stop it, or even that it needed stopping.

Marshall crawled around on the floor. Part of the time he sat in a corner, his face all wrinkled up like he was about to have an idea and couldn't quite make it. Most of the time he just looked blankly out of the ports. He seemed happiest that way, as if he understood that at last he was going to the stars.

His drive was successful. It worked.

A day passed, or maybe it was a week. There was a clock on the instrument panel. I remember it distinctly because it had a hand that made a complete revolution every minute. I sat and stared at that hand for hours, wondering what made it do that.

We got along all right. Luckily neither Marshall nor I had any violent anti-social tendencies, so we didn't distrust each other and try to fight. Really we were only a couple of babies going for a ride. Somehow we seemed to know what the emergency rations were for. And all the time the ship kept driving on, faster than light, hurtling out across space.

THE thing that saved us was so preposterous that it seems impossible. But it saved us, all right. No, the Patrol didn't catch up with us. They were billions of miles behind and losing fast. They couldn't contact us by radio, and we didn't get our memories back.

We began to learn over again—words, just words—the tools of the mind. One at a time we picked them up. And we had a hell of a time doing it, because the vocabulary source to which we had access was so limited. But we learned a word at a time, and eventually we got the knack of putting them together into sentences.

It came to us a lot easier than it would if we had never known what words meant. The ghosts in our minds kept giving us hunches about what was right and what was wrong. Eventually we fitted most of the pieces together again.

We had slowly drawn up on another ship that was going right along with us. At first we didn't know what that ship was or who was in it. We knew it was mighty important to us, but we had a lot of trouble finding out the reason.

When we finally understood that this was the ship Blackworth had stolen, and that he was in it, I went automatically to the proton gun.

I wasn't angry. The amnesia had washed all anger out of me. But Marshall said I looked a lot more terrible because I wasn't angry. He tried to stop me, only I wasn't going to be stopped. I was going to blast that ship right out of the sky. There was a man in it who deserved to be killed. It was my duty to kill him.

I swung the proton gun around, lined up the sights, pressed the firing button.

And nothing happened. The damned gun was out of order. The shot Blackworth had blasted at us had burned out an oscillator coil.

I got into my space suit, began jockeying my ship near to the other one.

Again Marshall tried to stop me. Finally I agreed that I wouldn't kill Blackworth. I would bring him back as a prisoner, let him stand trial. When I promised that, he let me open the lock and jump over to the other ship.

For all I knew Blackworth was waiting for me inside. I was ready for a fight, waiting for something to happen. But when I got inside the ship, I saw I wouldn't have to fight.

I found five men in there. Grisly looking customers, they were, all dead. They had fought among themselves, had killed each other off.

Marshall nodded when I came back and told him what I had found.

"Yes, of course. They were crim-

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inals, and their instinctive tendencies were to trust no one, not even each other. When they lost their memories, their instincts were all they had left to guide them. Their instincts were bad. Each believed in getting his and to hell with everybody else. The result was a fight to the death."

He shook his head as if he were sad about it. I was kind of glad. I didn't have to kill Blackworth with my bare hands, after all.

WHEN we got back to Earth, they treated us like heroes. It got worse after Marshall announced a way to get around the molecular flip-flop that resulted in amnesia when the speed of light was reached.

Now the human race can build star ships. We're building them, too. The first one will be the *Jacob Marshall.* Both Marshall and I think the ship should be named something else, but nobody wants to listen to us.

We want to name the ship *Ed,* just plain *Ed*—in honor of the hero who saved our lives out there in space.

Yeah, it was Ed, my bat-boy, who did it. The atomic flip-flop that cost us our memories didn't affect old metal-brain at all. If anything, it made him more eager. He went around that flier positively hunting for pants to press. He polished brass, he swept the floor, and in between times he gave me sage advice on my love affairs. He didn't know what was wrong with me, or that anything was wrong, for that matter. Which, incidentally, is a revealing commentary on how the human race appears to a robot.

He taught us our first words, all we knew. He really didn't know what he was doing. He was just talking to hear his head rattle. But from the words he used, we began to get an idea of what words were for. Once he started us, we did the rest.

Ed is very happy now, for two reasons. When the Space Patrol rewarded me with a captain's commission and pay, I gave Ed my lieutenant's bars. We soldered them to his metal shoulders. He is as proud of them as I once was. He keeps them shined so bright, they hurt your eyes.

The other reason? I really ought to sell Ed for junk after what he did to me, the rat. He put the doublecross on me good and proper.

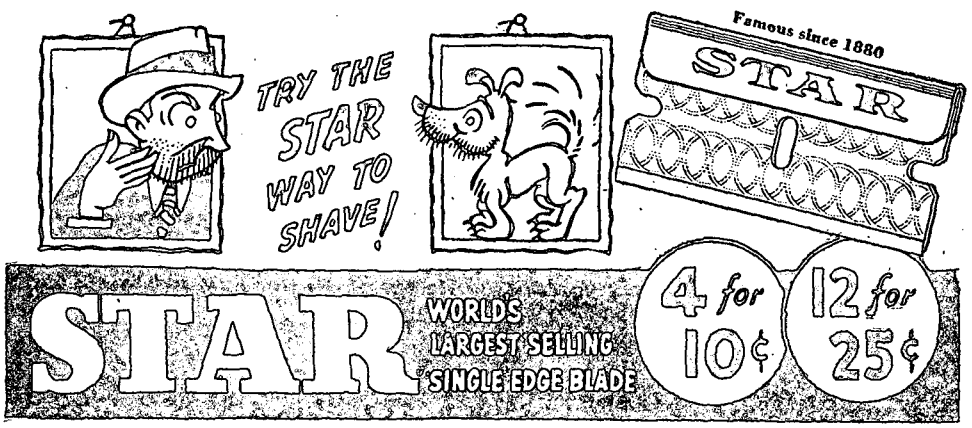
When I got back to Earth, I had forgotten all my visaphone numbers. Naturally I turned to Ed, the perfect number rememberer, for help. And did that skulking scullion help me?

He sure did. He gave me Marcella's number.

"No other number, Boss. That the only one. Marcella swell girl, Boss. You fixed to marry her already."

I have to admit he was right. Marcella is a swell girl. She makes a swell wife, too. Only Ed, damn him, didn't have to doublecross me into marrying her. I meant to do it, anyhow.

Next Month: CALLING ALL MARTIANS, a Sensational Interplanetary Feature by WILLY LEY



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HOW many of the scientific brain-teasers and cosmic conundrums in this month's quiz collection can you solve without referring to an encyclopedia? It's fun to be fooled—but it's more fun to know. So turn to page 128 for the correct answers to our IQ workout, as supplied by our own private bureau of information.

POSITIVE OR NEGATIVE

The following statements are either true or false. If your answers ring true, you'll also ring the bell. (Par for this course—10 correct.)

1. For the determination of accurate radial velocities of stars the use of the slit type spectograph is necessary.
2. If the paths of all the meteors observed from a single station on a given night are plotted on a chart of the sky, it will usually be found that a number of them seem to be coming from a certain particular point in the sky.
3. Many of the meteor showers occur year after year with definite regularity of date.
4. While from radioactive evidence it appears that there are about 39 radioactive elements, it is possible to distinguish by chemical methods only 10 of them.
5. In general, when light passes from one medium into another, its velocity does not change.
6. When light falls on the surface of a transparent body, part of it is reflected, part is transmitted, and part is absorbed.
7. The root of a plant is always found in the ground.
8. Cepheid stars are those stars closest to our Sun.
9. The War Department is most concerned over the nation's supply of manganese.
10. When a bar of tin is bent a marked creaking sound is emitted due to the friction of the crystals.
11. Fuels are burned for the sake of the heat liberated upon oxidation.
12. The Hotchkiss drive is usually employed in connection with diamond core drills.
13. Most everyday sounds have a frequency of only 250 to 2,000 cycles.
14. To save time in reading aloud the number 3.14159 . . . , just call it gamma.
15. Electric currents are led around paths called trajectories.

TAKE A LETTER

Here are fifteen incomplete scientific facts. Three or more suggestions are offered as possible fill-ins for each statement, but in each case only one is correct. Can you find the needle in the haystack—without an electro-magnet? (Par for this course—10 correct.)

1. The length of light waves is measured in: (a) radions, (b) millimeters, (c) angstrons, (d) relines.
2. "Frozen Sleep" is a treatment recently devised in the fight against: (a) rheumatic fever, (b) Bright's disease, (c) dementia praecox, (d) cancer.
3. Joseph von Fraunhofer is famous as the inventor of: (a) an improved system of television, (b) the spectroscope, (c) the highly accurate bombing on Allied planes, (d) the steam turbine.
4. Chlorophyll is to spinach as hematin is to: (a) man, (b) sugar, (c) steel, (d) oysters.
5. The Elasser theory has to do with: (a) Earth magnetism, (b) the separation of gasoline from crude oil, (c) the atomic structure of hydrogen compounds, (d) animal behavior.
6. The action of Coriolis' force is evidenced in: (a) a figure skater's pirouette, (b) fatigue strain in beams, (c) crystalline bonds, (d) gas storage tanks.
7. Siblings are: (a) children of different age by the same parents, (b) birds found in the Fiji Islands, (c) certain types of meteorites, (d) young squirrels.
8. The "binaural principle" is employed in: (a) submarine detecting devices, (b) keeping track of star movements, (c) diesel engines, (d) electrical welding.

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9. You would fall through the floor, but for the fact that: (a) wood is inflexible, (b) action and reaction are equal and opposite, (c) most of your weight is concentrated above your legs, (d) the force of gravity diminishes with increasing altitude.
10. To find out how fast a shaft is turning, you would use: (a) pyrometer, (b) tachometer, (c) pedometer, (d) barometer.
11. How many times a pendulum swings in a minute depends upon: (a) the length of the pendulum, (b) the weight of the bob, (c) the length of the arc.
12. Placing an object in a vacuum: (a) increases its weight, (b) decreases its weight, (c) does not affect its weight.
13. You could see the wave form of alternating current with: (a) a pantograph, (b) an oscillograph, (c) a chronograph, (d) a cardiograph.
14. Moonlight is produced by: (a) the heat of the glowing moon, (b) reflected sunlight, (c) phosphorescence of the moon's rocks.
15. A meniscus lens would probably be found in: (a) a large astronomical telescope, (b) a lighthouse tower, (c) a cheap box camera, (d) a compound microscope.

WHO'S WHO

Match the names of the following scientists with the branch of endeavor that identifies them. (Par for this circuit—6 correct.)

(1) Fermat	( ) Geology
(2) G. R. Kirchoff	( ) Astronomy
(3) H. Cavendish	( ) Medicine
(4) Roemer	( ) Botany
(5) Sir Charles Lyell	( ) Mathematics
(6) Hippocrates	( ) Physics
(7) J. B. Lamarck	( ) Chemistry
(8) Carolus Linnaeus	( ) Zoology

THE ACID TEST

Do you know your acids? Half of the following acids are inorganic; the other half are organic. Which is which? (Par for this stretch—8 correct.)

1. Sulphuric acid; 2. Hydrofluoric acid; 3. Acetic acid; 4. Benzoic acid; 5. Carbolic acid; 6. Phosphoric acid; 7. Nitric acid; 8. Cyanic acid; 9. Manganic acid; 10. Citric acid; 11. Butyric acid; 12. Hydrochloric acid.

HAVE A HEAT WAVE

The following quiz-ette is based on the relationship between heat and the human body, and the effect on human temperature. Merely fill in the blanks with the correct terms. Doctors are exempt from this lap. (Par for this route —8 correct.)

Human temperature is the temperature of the body, and normal temperature is usually said to be ——— Fahrenheit. Actually this normally varies in the course of 24 hours, so that the variation between maximal and minimal temperature during the period is about ———. The above figures are those obtained when the temperature is taken by ———. The rectal temperature is one degree ———.

The body temperature is determined by the relation of two factors: the amount of heat produced within the body, and the amount of heat ———. The amount of heat produced depends on the basal ———. Additional heat is produced by muscular activity and heating.

Extra heat is eliminated by any increase in radiation, condensation, or evaporation on the ——— surface, and by rapid and deep breathing. When insufficient heat is eliminated the temperature ——— and fever is said to be present. Normally the delicate adjustment in the body between heat production and heat elimination is under control of the temperature centers in the ———.

If the body temperature falls below ———, life is seriously threatened. On the other hand, the highest temperature compatible with life is ———.

WHAT'S YOUR SCIENCE I. Q.?

After you've completed the SCIENCE QUIZ and checked your results with the correct answers, get a slide-rule and calculate your score. Here's how you rate:

58-61—Superman.
50-57—Mental Marvel.
45-49—B.B. (Bachelor of Book-worms).
30-44—Try Crossword Puzzles.
15-29—Stick to Fiction.
0-14—Absolute Zero.

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COLOSSUS FROM SPACE

By FRANK JOHNSON

Author of "Enter the Crimson Mask," "Heroes Flight," etc.

The Colossus located the couple

THE Eastern Hemisphere had been conquered from one end to the other. It lay in bloody ruin and desolate waste in the wake of the conqueror. And now the Madman of the East was marshaling his forces and gathering his sinews of war to invade the last stronghold of health, liberty, and the pursuit of happiness on the globe. Already invading forces had started a vast pincer movement from north and south to encircle and engulf—and overwhelm the democracy of the West.

The World Waited for a Miracle—and It Came —From Another World!

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Thousands of bombers, thousands of tanks, hundreds of warships, and literally hundreds of thousands of troops of the Madman were mobilizing on all borders. Only a miracle could now prevent utter disaster, the final fall of a tottering civilization. And the day of miracles was long since past.

Vladis, the eminent bacteriologist, laid aside his newspaper. Frankly he met the troubled gaze of the girl who was his wife and laboratory assistant. From across the breakfast table, she had been looking at him in silent fear.

"Well, here it is, my dear," he said gravely. "The end of the world at last—what crackpots and prophets have predicted for centuries."

Veda met her husband's gaze bravely, but her faint smile was tremulous.

"It is terrible," she whispered. "And there is nothing we can do."

"Nothing," he agreed bitterly. "It is too late. The Government has waited and hoped too long. Our puny defenses will stave off the enemy perhaps a week—certainly no longer."

"And then?"

"Chaos," said the bacteriologist briefly. "I estimate that they will penetrate to here in about ten days. Fortunately—if you want to call it that—our laboratory is in an isolated region near the center of the country. Ten days! Just ten days left to carry on our research in the field of filterable virus."

"Vladis!" the woman gasped. "You intend carrying on our work in spite of all this? When we are face to face with death?"

"Yes," her husband answered grimly. "There is nothing we can do to help. And if I don't keep my mind crammed with work, I'll go crazy before the end. If only there were some super-microscope which would enable us to see beyond the reach of light! If only we could cross that shadowy borderline where the light wave fails! Who knows what an infinite variety of microscopic worlds would be opened to our vision?"

"COULD we have procured a larger instrument before—before the Madman conquered the Eastern Hemisphere?" Veda asked.

"It would have been pointless," Vladis said, shrugging. "My dear, we have the finest instruments made. They will magnify now beyond the power of light. But what good does it do when we seek to enlarge things smaller than the wave-length of light? We can magnify to infinity, but we can't. And it isn't the fault of the lens. No, there has to be another method. It is possible to see without the aid of light. It's been done in other fields—X-rays, with a photographic plate and the fluorescent screen. But X-rays are no good for microscopy.

"If only some wizard would appear and show me how to see below the range of light! If only I could possess a magic eye that would open the door of the infinitely small, expanding things before me as the ground expands below a dropping parachutist—as our microscopes expand a specimen on a slide, up to a certain point. Who knows, Veda, what worlds may—*must* lie below our range of vision? All things are relative.

"We first found bacteria. Then we found bacteriophage. Then the filterable viruses. Even fleas have little fleas to bite 'em, you know. But what lies below that? What secrets lie locked in the heart of an atom? For all we know, there may be universes with suns, planets, people, bacteria within a tiny grain of sand."

"Ah, if only we could find such a world as that and escape to it, away from this Madman from the East!" murmured Veda. "If only we could open such a magical gateway and lead all our people safely out of this world of strife and bloodshed! I— Come on, let's go to the lab. You've got me 'if onlying' now. The day of miracles is past."

Yet that night the miracle happened.

Ever after, Vladis and his wife were never sure which of them saw it first. Worn out from a long day in the lab, mentally exhausted from the terrible strain of impending world disaster, they couldn't sleep. It was late when

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they went out on the roofless plaza and stared up at the starlit sky.

How short a time would it be until the heavens were filled with the roaring anger of enemy bombers? When would the placid and majestic beauty of the hemisphere be blasted asunder by the lurid flashes of exploding shells, until the landscape all around the horizon would be red with the flaming hell of carnage and destruction. . . .

There were long silences between words. It was an effort to talk, and conversation was needless between them.

"I wonder what is up there," Veda said once, gesturing toward the velvet vault of the night sky. "I wonder what is beyond us—up."

Vladis did not reply. He couldn't answer, and he knew that she knew. There was another silence.

"Veda, my dearest," he said softly, at last. "I want you to know—whatever happens—that I have loved you with all my being. Nothing can erase that!"

The woman caught up his slender hand and kissed it.

"You always made me impossibly happy," she whispered, and the man felt a warm tear fall upon his hand.

They stood there together, gazing up at the night. As softly as stealing twilight there grew a strange luminescence in the northern sky. Reaching from horizon to zenith, it filled the void from east to west.

"Vladis!" the woman whispered suddenly. "That light is growing stronger. Has it—has it—come so soon?"

"I don't know what it is," the man replied. "Yes, it is brighter. It's been there for some time."

"Look!" she cried, pointing. "It is shrinking toward us. It is taking on an outline!"

IT was. Still bulking across half the sky, the luminous vision was growing in solidity. Blotting out one constellation after another, it was taking on definite shape and outline. Queerly it seemed to draw nearer.

"It is taking the shape of—of a man!" murmured the bacteriologist tensely. "It is impossible! What in the name of God can it be?"

Veda was trembling now. She pressed closely against the side of her husband. Her eyes never left the appalling sight above her. As though approaching at a dizzying speed and shrinking rapidly at the same time to become small enough to alight on this world, the apparition drew near.

"Can it be some trick, some new and terrible weapon of the Madman?" whispered Veda anxiously.

"Impossible! It's incredible! But it is definitely a man. It is a giant, Veda, a cosmic giant from outer space."

Words failed him and he fell silent. Neither of them felt the slightest impulse to run. There was no place to go. So they stood there on the plaza fearlessly, although awed, and watched the shrinking descent of the strange being.

And then, as though hovering to select a suitable landing place, the colossus slowly settled to his feet upon the level plateau where stood their laboratory. He shifted and swayed there, continuing to shrink in size. Now the watchers saw that the strange visitant was indeed a man such as they knew, and no weird monstrosity. But he was alien, as strange as the manner in which he had materialized and set foot on this planet.

Staring down with piercing blue eyes from a ruggedly handsome face, he located the couple on the plaza immediately. Then he stared about him through the soft darkness as he continued to grow smaller. He grew less ponderous, started striding forward.

When his stature had become commensurate with that of Vladis, about six feet tall, one sinewy hand went to his belt. He touched what must have been a control stud there, for he abruptly ceased shrinking. He wavered, reeled, and would have fallen had he not propped himself up with the odd stick he carried. This was an immense steel or iron spike the like of which the watchers had never seen before.

Veda uttered a little cry of sympathy for the cosmic stranger's plight.

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He flashed her a swift look of intelligent understanding as he struggled erect and came to a halt beyond the edge of the stone flagging. Behind both these actions which denoted intelligence there was a dazed look of incredulity on his face. Apparently he had not expected to find people here.

The incredulity was mutual. How could a man come from space as this man had come? His shrinking was a physical impossibility. Vladis knew he was dreaming, but he was thoroughly the scientist. He studied his visitor carefully.

The stranger appeared perfectly normal in physique, a bronzed and athletic specimen of man. Aside from the amazing method of his arrival, he differed mostly in his attire. He wore an odd metal helmet on his head and was clad in athletic shorts and a tunic which was covered with metal scales not unlike a shirt of mail. On his feet he wore a pair of soft half-boots. Around his waist was a broad belt with a number of buttons or studs, and in one hand was the vicious looking spike. But he himself did not appear vicious. He was more like an earnest visitor from a distant planet, not sure of his reception.

"Whence do you come, man of mystery?" Vladis asked.

THE stranger answered him in a sort of harsh but not unpleasant form of gibberish. Vladis frowned and shook his head. He tried one of the languages of the Eastern Hemisphere, and now the stranger shook his head. The whole thing was amazing.

Refusing to accept the only explanation that his senses told him was the answer, the bacteriologist nevertheless made an attempt to communicate with this being. He used a method which scientists had long recommended as the only way to establish intelligible contact with a being of another world—the science of mathematics, of universal truths.

Drawing a piece of chalk from his pocket, Vladis motioned the stranger to watch. Gravely he drew a right-angle triangle on one of the stone flags. Then he drew the extension of the squares of the two sides. He dropped the chalk and stepped back to watch the visitor breathlessly.

To his delight the other's eyes lighted in swift comprehension. The bizarre stranger stepped upon the plaza, knelt, picked up the fragment of chalk. He deftly drew the square of the hypotenuse. Then he drew a line to connect the two squares Vladis had made and put a strange figure beside the line. Within the squared hypotenuse he drew the same figure, indicating that they were equal.

"Veda!" exclaimed Vladis. "He knows that the square of the hypotenuse is equal to the sum of the squares of the other two sides."

"Why shouldn't he know geometry if he came through space?" said Veda, nodding. "He has a warm and pleasant voice too, even if he does speak outlandish gibberish."

The stranger flashed a smile at both of them.

Elated, Vladis pointed to himself.

"Vladis," he said.

The stranger repeated the name, nodding brightly. Vladis pointed at his wife.

"Veda," he said.

Again the stranger nodded and spoke the name, bowing to the woman. Vladis now pointed his finger at the man from space and raised his eyebrows interrogatingly. The other spoke a name.

"Mhark Dahj," Vladis and Veda repeated the odd name after him. Then, the queer introduction over, by motions and signs Vladis invited his visitor into the house.

"Do you think that is wise?" Veda asked anxiously.

"Why not?" returned Vladis. "I don't understand this yet, but what harm can he do? We've only nine more days to live, anyhow."

This unpleasant reminder was unanswerable. The three of them entered the building, Mhark being careful not to touch either his host or hostess. Almost automatically Vladis led him to the laboratory. And the face of Mhark lighted up magically at sight of the various bits of apparatus.

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He then moved rapidly from piece to piece, pointing at each in turn and repeating the names that Vladis gave him. Dawn was breaking before any of them realized it. Then came another queer angle to Mhark. Veda went out to return shortly with food and drink. When this was offered to him, Mhark politely declined, tapping his belt and indicating the buttons thereon.

"He must mean that he derives sustenance by a form of radiant energy from his belt," Thorne exclaimed, pointing.

Mhark studied his host's face and gesture. Associating them with the unknown words correctly, he nodded. He motioned Vladis and Veda to proceed with the refreshments while he continued to look on and learn the names of new items.

It became a game with both Veda and Vladis to see who could impart more knowledge to this highly intelligent and willing pupil. Sleep was forgotten. They spent the day in the laboratory.

In the afternoon, Veda got several books and pointed out pictures to Mhark, swiftly and clearly describing the scenes and their meaning to him. Before night the man from space was haltingly putting sentences together. He improved rapidly as he went along. He began to ask questions almost at once. Oddly enough, he did not ask where he was or anything about the location of the world on which he found himself. It was evident that he knew exactly where he was and why. His avid interest was in the people and their history, in Vladis and his bacteriological work.

For two days and nights he kept the pair busy supplying him with information. They had to take turns at sleeping, and found to their amazement that they really could sleep. The advent of this stranger from space had somehow stimulated and renewed their interest in life. It was the third morning that Mhark finally satisfied their burning curiosity about him.

"You want to know where I came from," he said gravely. "At first I thought it would be impossible ever to explain to you. But your keen intelligence and the very nature of the work you are doing make my task surprisingly simple. I come from a super-universe far above and all around this cosmos of yours. Strange as it may seem, I, too, am a bacteriologist in my own world.

"I found a way to project myself into the microscopic world in pursuit of our own types of filterable viruses. Your amazement at what I tell you can be no greater than my own at finding creatures like myself and a similar civilization here below."

"But how?" cried Vladis feverishly. "How did you manage even to see a world as small as our globe, our solar system—our very universe must be to you?"

"HAVE patience, Vladis," said Mhark. "I intend to tell you. I think I shall be able to solve your own microscopic puzzle for you. Up above, we reached the same blind alley that now confronts you. For many of our years it had been accepted as absolute fact that no microscope would ever reveal anything smaller than the wave-length of light. So we ceased to use light. Our new microscopes use an electron beam. Electrons behave like light waves. But their wave-length at high voltage is only one hundred thousandth the wave-length of light.

"That means that its upper limit is one hundred thousand times greater than the best light microscopes. We found that electron beams could be bent by magnetic fields. If the field was shaped like a glass lens, the electrons behaved quite similar to light waves. So we applied our theories. The result was the electronic microscope. It is not unlike your own equipment, save that it does not look like a microscope. But the principle is the same.

"We use electrons instead of light, magnetic fields instead of lenses, and a fluorescent screen for seeing the image. Of course, we had to use a vacuum because of the hugeness of air molecules in comparison with the size of electrons. And we had to work with juice of one hundred thousand volts and fifty thousand amperes.

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That is why I don't dare let you touch me. It would mean instant death for you, if you were to come into contact with me.

"But there is your clue for your own research. Whatever the difference between this world of yours and mine, the same principles seem to work. You can delve into your own world of the infinitely small by following the suggestions I have made to you. Completely astounding though it is to me, you obviously have your own spectrum of light and an orderly arrangement of the various octaves. You have your own evolutionary cycle based upon the same ninety-two elements with the atom as a building block.

"In brief, this—to me—submicroscopic bit of matter is a world that is part of a smoothly functioning universe to you. It is governed by the same fundamental laws. How do we know how many successive universes lie below us, or above us? Size is relative. What to us reduces to the vanishing point of infinity, may to the infinitesimal creatures below be a vast expanse of matter which encompasses a universe relatively greater than the one above this from which I came."

"The magical gateway, Vladis!" cried Veda. "Remember? Perhaps this is it. Wouldn't it be a marvelous adventure, a wonderful experiment, to find the way into a submicroscopic world? We could tarry there long enough to learn its fundamental laws and then build a new super-electronic microscope and descend on and on. . . ."

"Fantastic thought," snorted Vladis.

"Why?" countered Veda, gesturing toward Mhark. "He came from the macrocosm above us."

This was unanswerable. Vladis sighed.

"Alas!" he said sadly. "That you should arrive, Mhark, to show us the way now. There remains no more than a week of freedom or perhaps even of life itself for us to work."

"Mhark!" cried Veda appealingly. "You must show us the way. If we cannot lead our people into a smaller universe, perhaps we can escape upward to yours. We must do it!"

"What are you talking about?" demanded Mhark quickly. "What do you mean?"

"The Madman of the Eastern Hemisphere is even now attacking the borders of this country," said Vladis tersely. "The last stronghold of liberty and democracy is falling, and with us topples the civilization of the entire world."

"This is incredible!" murmured Mhark queerly, his eyes beginning to gleam. "You interest me far more than you know. Tell me all about it."

Between them, Vladis and Veda gave a thumbnail but graphic sketch of the chaotic world conditions. They told of the rise from obscurity of the mad dictator across the ocean, of the crass passivity of nations, of the terrible events which had crowded so closely on the heels of each other. And now the world lay shocked and shattered beneath the succession of numbing blows.

"He is already attacking our eastern seacoast and exerting his famous pincer move on our north and south borders," concluded Vladis despairingly. "There is no hope for the world. If only you had come a year ago! But, anyway, we thank you for—"

VLADIS broke off and cocked his head to listen. Far overhead there sounded the crescendo roaring of a fleet of bombing planes. Whether they were defense planes or enemy ships none of them knew.

"Even now it is too late," he breathed.

Mhark sprang erect, his rugged face setting in stern lines.

"The filterable virus!" he exclaimed aloud. "Can this be the scourge I came here to seek? I wonder? I *wonder!*" Then he became vibrant with action. "Perhaps all is not lost yet, but I must hurry. Farewell, my kind friends. I must leave you now."

Both Veda and Vladis voiced protests. Mhark waved them down.

"It is only for a little while. I will try to see you again. But—but there is so much new knowledge here for

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me and so little time. I am still groping, trying to understand. A dozen theories are revolving in my brain. Perhaps I can help you at the same time that I solve my own original problem. . . ."

He grabbed up his peculiar spike and ran out onto the plaza. His right hand was fumbling at his belt. They trailed after him, wordless, incoherent. Even as they reached the threshold, Mhark was striding out across the plateau.

A shimmering haze mantled him, and he was expanding in size like a toy balloon attached to an air hose. The formidable spike in his hand grew in proportion with him and his queer garments. All of this was a supreme mystery to the bacteriologists, along with all else about this man from super-space.

Mhark shot up to the immense height of five miles before he ceased growing. Then the shimmering haze which surrounded him winked out and disappeared. His helmet, spike and metallic garments gleamed and glittered in the rays of the morning sun.

With a downward wave of one gigantic hand, he set off toward the east, clipping off better than two miles with each Gargantuan stride.

"Where is he going?" cried Veda. "What is he going to do?"

"We are going to find out," declared Vladis. "Come, Veda. We'll take the monoplane and follow him. We can't let him go out of our lives like this."

Five minutes later a fast low-wing monoplane took off from the plateau. It climbed for altitude in a long diagonal, and shot eastward in the wake of the receding colossus. Hour after hour, for more than a thousand miles, they followed the now running figure of the giant. What pandemonium reigned below them at the passage of the terrible and unbelievable figure of the giant they could only guess. And then they came upon the eastern theater of war.

The awful thunder of huge guns crashed like thunder from horizon to horizon. Far ahead lay the restless and heaving expanse of the open sea. Close to the seacoast a great city was in flames. In the distance squadron after squadron of enemy planes blackened the sky. On the ground thousands of armored tanks with the mobility of modern mechanization encircled the doomed metropolis, crashing through barb-wire entanglements and other puny obstructions in their path. Hundreds of thousands of people were dying. It was the final inferno. . . .

"We'll be shot down," cried Veda. "Vladis! Vladis, turn back!"

"Who wants to live in a mad world like this?" retorted Vladis wildly. "Look, Veda. Watch Mhark. What is he doing?"

THE gigantic figure had halted and was grimly surveying the scene of strife and wreckage below him. As he turned his great head, the man and woman in the following plane were awed at the stern yet noble expression that transformed his face. With one careless flip of his hand he batted out of existence an entire squadron of bombers which swarmed to attack him. There was one blinding flash of light, a single clap of sound which was so great as to be almost soundless. Molten wreckage spilled from the sky line rain.

Without the slightest apparent effect to himself—not more than if he had been a small boy holding by its tip an exploding baby firecracker—Mhark took one step over a section of the city to where the invading tanks were thickest. His free hand reached for his belt. The shimmering haze of the enormously powerful force field enveloped him. He shrank rapidly until he was no more than a couple of hundred feet tall. Then the aura winked out, and he poised himself like a man gigging a fish or a frog.

His terrible spike jabbed downward. There was a brief flash of light. The watching pair saw that his weapon had been driven completely through a monster tank, pinning it to the ground. Already it was beginning to melt down like a thing made of wax.

Mhark knelt beside it just as a second tank turned its guns upon him. Puny flashes of fire and shells and

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shrapnel burst harmlessly against the plated mail of his tunic. And then his great, sinewy right hand reached forth. He grasped the upper gun turret of this second tank just as the side port swung open. Men in the uniform of the enemy swarmed out and frantically fired up at the giant with their ineffectual weapons.

Another flash of dazzling light—and the second tank went out of action, becoming just so much molten junk. Mhark barely brushed the tiny figures of the little men, and they wilted horribly.

At this the colossus seemed to go berserk. He became a volcano of action as he advanced along the rim of the attacking circle. Swinging his terrible spike, which had the awful energy of a thunderbolt, he kept stamping ruthlessly with his feet. He was like an avenging angel. He was an actual electric needle, a searing surgical knife that blasted and withered every weapon of war and every soldier he touched.

Within minutes he made the complete circuit of the beleaguered city, destroying tanks and men by the thousands, batting clouds of combat planes and bombers out of the sky. The invasion was over before men had time to think, even to grasp the stunning nature of this impossible warrior of fire.

Then, without pause, the victor sprang erect once more, his hand going to his control belt. He expanded swiftly to his former five-mile height and then started for the seacoast. The water boiled as he stepped into it. But he went on irresistibly, smashing enemy fleets out of existence. He started a running battle along the coast, destroying all the enemy as he advanced. He passed out of sight toward the south, carrying the torch of annihilation as he went.

Shaken, white of face, almost completely unnerved, Vladis brought his monoplane in to the municipal landing field. Veda had fainted, and he commandeered a vehicle to take her to the nearest hospital. For two long days and nights they stayed there. Reporters thronged to get their incredible story. But there wasn't a single skeptical voice. The whole world saw the proof.

For the entire two days and nights, Mhark altered his height to suit his convenience. He raced around the entire borders of the country and completely annihilated the gathered forces of the Madman of the East. Reports were pouring in from all parts of the country. Men and women went mad from joy and hysteria. Before the end, troops of the would-be conqueror were frantically fleeing before the advance of the terrible and invincible giant.

But all to no avail. Mhark overtook and destroyed them all. The world was saved by a miracle such as the inhabitants had long ceased to believe in.

ON the third morning, the gigantic victor strode back to the first city from the north, having made a sweeping circuit of the continent. Great crowds thronged the streets to greet him. The work of clearing away the debris and cremating what remained of the dead was halted. All men wanted to see and hear this Gargantuan savior from beyond the stars.

Mhark's face was now calm in repose. He stood at his five-hundred-foot height and called aloud.

"Vladis! Veda! Where are you?" His voice rang out with the authoritative blast of vocal thunder.

Hurriedly Vladis and Veda were taken to the top of the tallest building left standing. Hand in hand they faced the man out of infinity.

"We are here, Mhark," Vladis called.

Mhark located them quickly. In that familiar gesture, his hand went to his belt. The shimmering haze enveloped him briefly, and he shrank to a point where his head was on a level with his little friends. Carefully picking his way, making sure that he touched nothing of metal or flesh, he advanced.

"Vladis," he said, softening his voice so that it did not blast. "I think I was in time to save your world. I am truly sorry that many innocents

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must have perished with the aggressors. But it could not be helped."

"There isn't a hint of censure, Mhark for what you have done," Vladis replied in a ringing voice. "The entire world has naught but thanks to render you."

"It is well," said Mhark. "And you, in your turn, have done me an inestimable service in showing me how to combat a specific kind of filterable virus. By means of a high-voltage stream of electrons, I think my own world can conquer the terrible scourge of cancer. As for you, follow up the experiments I suggested to you and delve down into your submicroscopic world for your filterable viruses. I must return to my own super-world above now. I have tarried here dangerously long."

"Wait! Wait!" cried Veda, holding out her slim hands in lovely appeal. "You have told us nothing of yourself, Mhark. You have not told us how to project ourselves into the submicroscopic field. We know nothing of the macrocosm from which you came. Won't we ever see you again? Stay just a little longer and give us of your wisdom."

An odd expression crossed the face of Mhark.

"I am sorry, Veda," he answered gently. "That cannot be. I must go before it is too late. Continue your research work in your own submicroscopic fields. If the necessity for physical projection arises, I think you and Vladis will discover the secret."

MHARK paused and reached once more toward his belt. From an inner pouch he withdrew a round timepiece with a face that showed twelve numerals about its perimeter. He looked at it and smiled wearily.

"As for seeing me again, I fear it is not to be. I have already spent, calculated in the time of my own world, thirty minutes here with you. This world of yours is vast to you. But to me it is only a minute section of a malignant growth mounted on a film of nitrocellulose less than one-millionth of an inch thick. A full generation will have passed here before I could even think of making a return trip. So this is farewell forever, my friends.

"One thing I will tell you. It might interest you to know that this malignant growth was cut away from the vocal chords of a mad European dictator by the name of Adolfus Heil."

He kissed his hand to the wide-eyed Veda and waved and nodded to the thronging populace. Stepping back carefully beyond the city, he placed his hand upon his control belt. The shimmering radiance sprang into being about him. He expanded at cosmic speed, threatening to blot out the sun and then withdrew beyond the confines of this universe.

"Mhark! Mhark!" called Vladis despairingly. "Where is your universe? Where is your world? What shall we remember you by?"

From the fading, expanding figure of the man from super-space floated a whispered answer.

"Remember me as Mark Dodge, a human being from the neighboring planet Earth. . . ."

"I Talked with God"

(Yes, I Did—Actually and Literally)

and, as a result of that little talk with God some ten years ago, a strange new Power came into my life. After 43 years of horrible, sickening, dismal failure, this strange Power brought to me a sense of overwhelming victory, and I have been overcoming every undesirable condition of my life ever since. What a change it was. Now—I have credit at more than one bank, I own a beautiful home, own a newspaper and a large office building, and my wife and family are amply provided for after I leave for shores unknown. In addition to these material benefits, I have a sweet peace in my life. I am happy as happy can be. No circumstance ever upsets me, for I have learned how to draw upon the invisible God-Law, under any and all circumstances.

You too may find and use the same staggering Power of the God-Law that I use. It can bring to you too, whatever things are right and proper for you to have. Do you believe this? It won't cost much to find out—just a penny post-card or a letter, addressed to Dr. Frank B. Robinson, Dept. 16, Moscow, Idaho, will bring you the story of the most fascinating success of the century. And the same Power I use is here for your use too. I'll be glad to tell you about it. All information about this experience will be sent you free, of course. The address again—Dr. Frank B. Robinson, Dept. 16, Moscow, Idaho. Advt. Copyright 1939 Frank B. Robinson.

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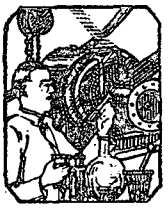

Science Questions and Answers

LUCITE

What is "Lucite"? Has it the property of bending light?—B. R., Lancaster, Pa.

A veritable Cinderella among the products derived in part from coal is "Lucite," a methyl methacrylate plastic. This crystal-clear, lighter-than-glass and practically unbreakable material is used extensively in the decorative arts, from jewelry to furniture, and the list of its applications grows apace. Most spectacular is its ability to transmit cool light around curves—a property utilized in modern surgical and dental instruments which themselves conduct light to the spot where it is needed.—Ed.

THE WORLD'S BIGGEST NOISE

Is there any record of the greatest noise ever produced on Earth?—H. S., New York, N. Y.

The world's greatest noise was produced by the world's greatest explosion. And that occurred on the morning of August 27th, 1883. At that moment the island volcano of Krakatoa in the Dutch East Indies burst into eruption with unparalleled fury.

Over 7,000 acres of countryside were blown to smithereens. In fact, the whole island literally exploded, and with the mightiest roar that ever assailed human ears. This loudest of all noises was actually heard by lighthouse keepers on Rodriguez Island, 2,969 miles to the west, and at Alice Springs, Central Australia, 2,250 miles to the east.

If Krakatoa had been situated in Newfoundland or Eastern Canada, the eruption would have been audible in the British Isles. Where formerly stood mountains a mile high, there is now nearly 1,000 feet depth of sea water.—Ed.

SEAT OF THE BRAIN

What part of the brain in man is the seat of intelligence?—S. K., Washington, D. C.

Intelligence is not confined to any single area of the brain's cortex, but it is a function of the entire brain. Recent experimental findings presented by Prof. H. M. Hildreth of Syracuse University seem to bear that statement out.

Indirect methods must ordinarily be used to study the work done by different parts of man's brain, because it is not possible to take out one area after another to measure what functions remain and which are lost.

Dr. Hildreth's study was made on those unfortunate persons who through the brain condition known as cerebral arteriosclerosis have had destroyed small areas of tissue throughout the brain. These injuries occur at random, or partically so, all through the brain.

Comparing the achievement of 201 such brain-injured persons on several mental tests with that of an equal number "control" subjects matched with them on initial intelligence, Dr. Hildreth found that the deterioration of the brain-injured patients ranged all the way from zero to 90%, according to the difficulty of the particular test. If the ability to pass a given test were dependent upon one particular area of the brain, the scattering of the brain injuries throughout the brain would have resulted in a corresponding scattering deterioration in test performance.

Such scatter, Dr. Hildreth did not find. Instead, the results indicate that the whole brain works in harmony to produce the behavior measured by intelligence tests.—Ed.

TELEVISION FLYING TORPEDO

I have heard a lot about the war weapon, the television flying torpedo. Can you tell me what it is, how it functions?—B. C., Des Moines, Iowa.

The weapon you speak of is an aerial torpedo that carries a virtual television camera in its nose. After such a torpedo is launched its direction is controlled from an airplane that may be miles away. The plane's pilot television receiver lets him see ahead of the torpedo, making it possible to direct it by radio to any target.—Ed.

STORED OXYGEN

If seals are mammals, why is it that they can survive under water for as long as fifteen minutes?—E. K., Wading River, L. I., N. Y.

Seals can swim under water for six or more minutes, although the fifteen minute duration you speak of seems going some. An analysis of seal muscle has shown that since it contains about seven times as much haemoglobin as beef muscle, the seal can store a large oxygen reserve in the muscles.—Ed.

CONTINUOUS VISION

Does man see in a "continuous flow," so to speak? Or is our vision broken up?—L. T., Spokane, Washington.

There is no continuous vision. We look about us and seem to see uninterruptedly. It is only natural, then, that most people take it for granted that they see continuously. But what appears to be continuous vision is no more than an optical illusion. Research has made it clear that human beings in reality have "motion picture" vision. As is generally known, motion pictures don't move. The audience witnesses a series of still pictures upon a screen. These still pictures, following one another in rapid succession, create an illusion of movement and continuousness. Thus it is with the human eye.

Between each still picture flashed upon the picture screen there is a very brief period when the screen is dark. This period is so brief, of course, that the audience does not notice the gap between the pictures. The motion picture is similar in this respect to the human eye, with this difference: the retina of the human eyes during this fraction of a second of darkness retains the previous image so that it blends perfectly with the image immediately following.

Experiments have shown that the eyes of cats and other animals are similar to human eyes insofar as the motion picture type of vision is concerned. Dr. Karl U. Smith, psychology professor at the University of Rochester, has devised a slot machine to test the mental reactions of cats, and a unit in this mechanism is a hollow slatted sphere, which proves that cat eyes react to visual experience in a manner similar to those of a man. Dr. Smith's experiments have scientifically recorded cat eye movements by the tiny electric currents that are generated when the eye muscles contract.—Ed.

THIS department is conducted for the benefit of readers who have pertinent queries on modern scientific facts. As space is limited, we cannot undertake to answer more than three questions for each letter. The flood of correspondence received makes it impractical, also, to promise an immediate answer in every case. However, questions of general interest will receive careful attention.

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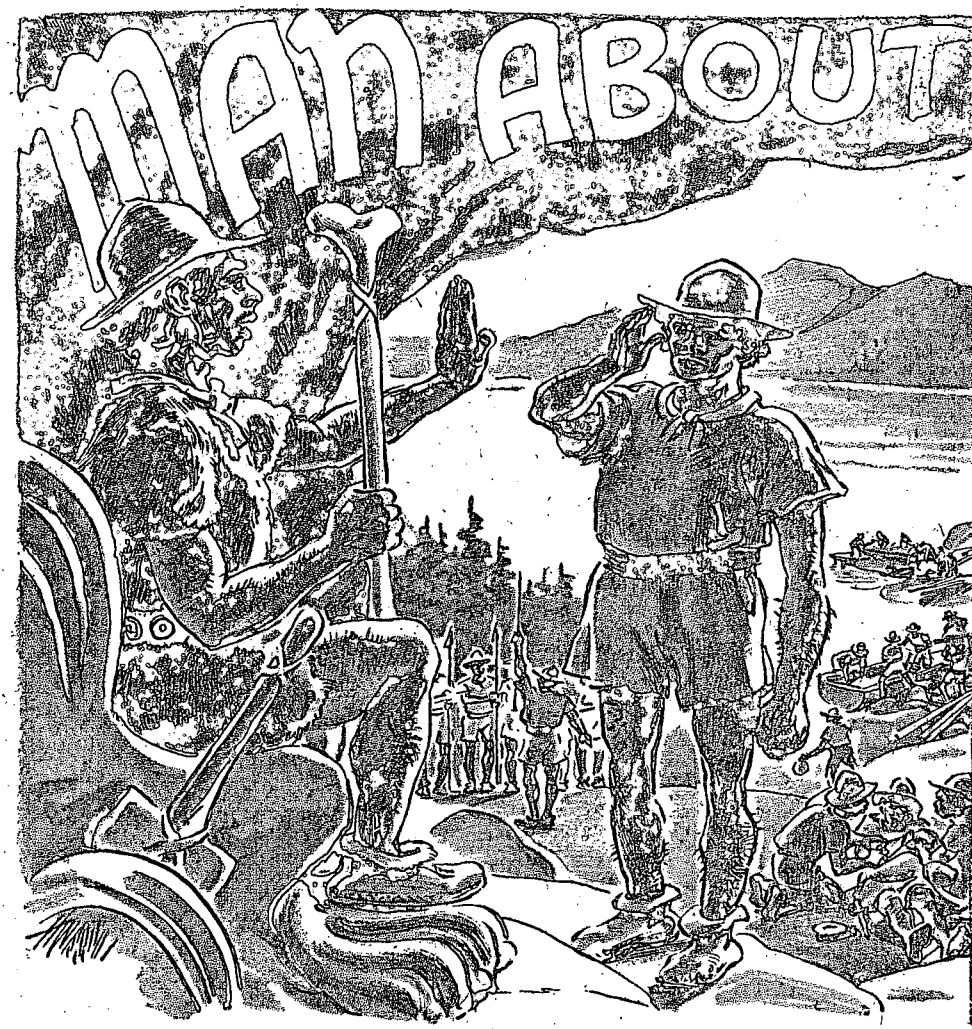

A Complete Pete Manx Novelet

By KELVIN KENT

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CHAPTER I

Manx Thinks

PETE MANX had an idea. He sat in the laboratory of his friend Dr. Horatio Mayhem and deftly tossed his derby in the general direction of a rheostat. There was a crackling outburst of blue sparks, and Mayhem's lean, storklike figure was galvanized into frantic activity. He hastily removed the derby and gave it back to Pete.

"Never do that," he told the squat little ex-barker reprovingly. "I'm using a lot of high voltage around here."

Manx looked uncomfortable for a moment. His brother-in-law had met a not entirely unexpected end as a result of a current of high voltage electricity. Pete glanced apprehensively at his chair, but relaxed when he failed to discover any suspicious looking wires connected with it.

"Okay, Doc," he said. "Unlax. Take it easy. I got a proposition."

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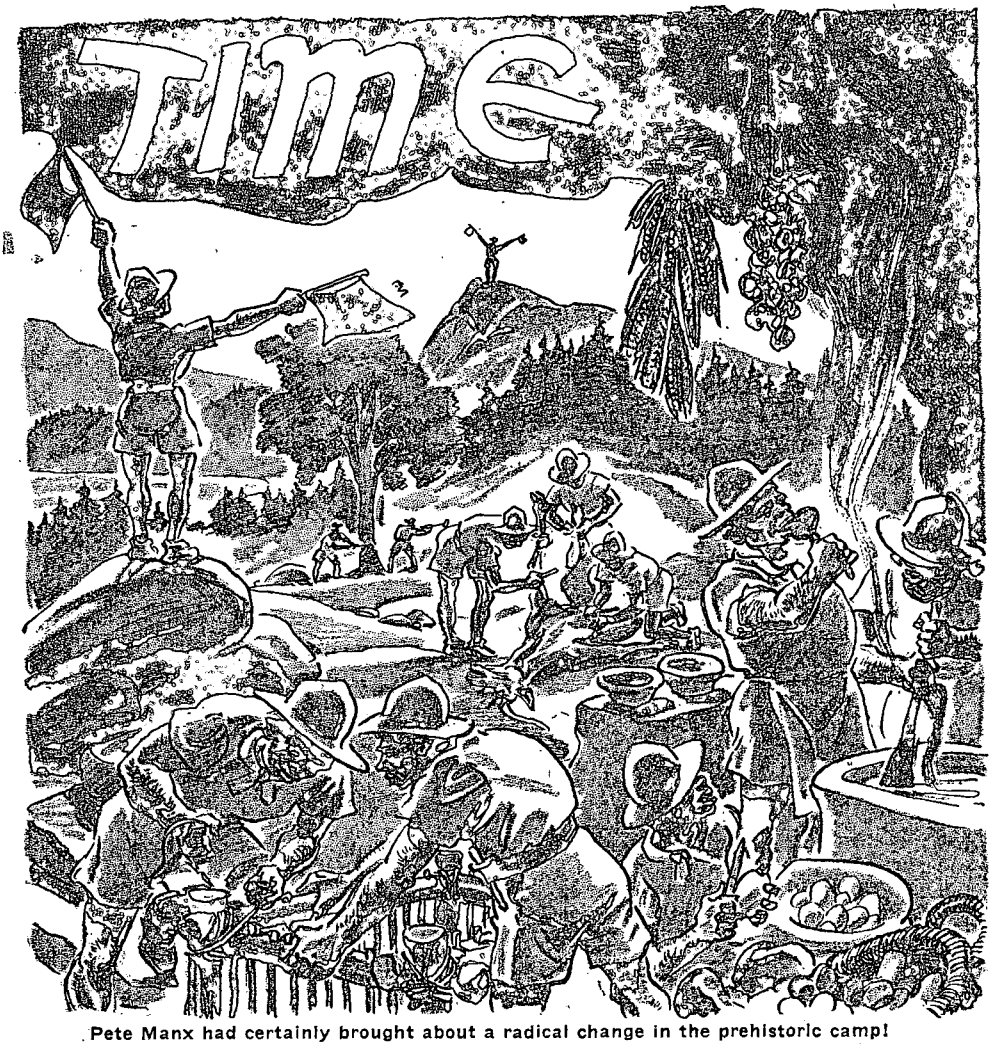

Pete Manx had certainly brought about a radical change in the prehistoric camp!

Piltdown Pete Chisels a Page from Stone-Age History When He Breaks the Chain of the Centuries—and Finds the Missing Link!

Mayhem started slightly. He had been involved in Pete's propositions before. He still remembered with horror the murderous proclivities of the racketeer "Mile-away" Moratti. He had come to the disheartening conclusion that Pete Manx was a trouble conductor.

"Why don't you go away?" he asked, rather plaintively. "I'm in the middle of an important experiment."

"Yeah?"

Impressed, Pete looked around. He saw nothing but the usual chaotic labyrinth of apparatus. A guinea-pig, in a cage, was regarding him with baleful intentness. Otherwise, all was quite the same as usual.

Mayhem beamed, however. He pointed with pride to the guinea-pig.

"I'm testing his synapses," he explained. "And his." He pointed to a rabbit that was calmly devouring a portion of lettuce in a corner. "I'm trying to create an electrical stop-gap to nerve-impulses that will induce temporary paralysis."

Pete ignored him with his usual scientific detachment.

"I want to bet my roll on Pick-me-up," the ex-barker stated. "He just won the Kentucky Derby." He drew a newspaper from his pocket and indicated the headline. "See? A sixty-to-one shot."

"The laws of chance," Mayhem remarked, his eyes growing bright with interest, "are most fascinating. Espe-

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cially when you consider Planck's constant and the Heisenberg uncertainty factor." Then he noticed the date of the paper. His eyes dulled again. "But the creature, Pick-me-up, has already won the Kentucky Derby. I can't see how you can expect to find someone who will take your wager."

"That's where you come in!" Pete was beaming now. He straightened his red-and-green plaid necktie, lit a cigar, and aimed it at Mayhem. "If I'd known yesterday that Pick-me-up was the winner, I could have cleaned up. See?"

"You didn't know, though."

"There's the answer," Pete grinned, pointing at a chair that bore a discomforting resemblance to an electric seat. "Your time machine!"

MAYHEM'S lips compressed with prim annoyance.

"How often must I tell you that there's no such thing? Time travel is impossible. My device simply liberates the ego—the consciousness—and sends it into the central time-hub, about which time itself revolves. Time is like a closed circle, a wheel. At present we're existing at a certain point on the circumference. If we can take a short cut through the diameter of the wheel, we can enter another time sector. You should know that."

"Yeah, Doc, I know. I oughta. I been back to Rome, Egypt, and twice to England. Robin Hood, Cheops, King Arthur, Claudius—I had my fill of that kind of stuff."

Mayhem was scarcely listening.

"What happens, of course, is that your consciousness enters another time sector. Automatically it enters the mind and body of someone who is existing at that particular moment. If you went back to the fifteenth century, you might find yourself existing as Columbus, King Ferdinand, or a savage in the Caribbean."

"No, thanks," Pete said. He shuddered feelingly. "Just forget about shooting me all the way back there. I want you to send me back just one day. Yesterday. So I can lay a bet on Pick-me-up and collect it when I get

back to now."

"What?" Mayhem's jaw dropped. "Yesterday! But—but you were alive then!"

"So what?"

"It isn't possible! It's a paradox. There couldn't possibly be two Pete Manxes—"

"Thanks," said Pete, pleased by the compliment.

Mayhem went on unheedingly.

"And you can't change a known and immutable past. You didn't bet on Pick-me-up yesterday, and that's that."

Mayhem turned suddenly. A huge, pompous man had entered the lab. It was Professor Aker, Pete's arch-enemy, with whom he had quarreled in a multitude of historical eras. Aker glared at Pete through his pince-nez.

"Well, what is it now?" he boomed. "What does this moron want?"

"Hey!" Pete said resentfully. "I know what that means. Don't think I got no education at all, fat stuff."

"Quiet," Mayhem commanded, and turned to the professor. Quickly he explained Pete's desires. Aker nodded thoughtfully.

"An interesting experiment. Why not try it, Mayhem? After all, what

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can you lose? He's no use to anybody while he's alive, anyhow."

Pete swore somewhat anxiously under his breath.

"I'll take my chances," he grunted. "Sixty-to-one on Pick-me-up is plenty good odds. I'll take a chance like that any day."

He went over to the electrified chair and sat down in it. Doctor Mayhem turned to his control board.

"This won't take long," he said. "Er—Professor Aker, I expected you yesterday to help me with my synapse experiments. What happened?"

Aker frowned. "I really can't say. A touch of sun, perhaps, or something rather like amnesia. I'm probably getting absent-minded, but for the life of me I can't remember what I did yesterday morning. It—"

"Come on," Pete broke in impatiently. "Let 'er roll."

MAYHEM obediently let her roll. He pushed buttons and twirled levers. Things began to revolve and spit sparks. The physicist began to look worried.

"Funny," he murmured. "There's something wrong. I believe I actually need more power."

"Feed her more juice, Doc," Manx urged, gnawing his cigar. He pushed the white rabbit away from his feet. "Scram, stupid."

The beast hopped away, paused, and returned to sniff at Pete's green socks. Mayhem generously applied more current. A low hum of restrained power throbbed through the room.

"This is almost the limit," he said. "If—" He pushed a lever further over.

Crash! Lightning struck, with raving white flames. The room rocked and jarred under the terrific impact. For a second Mayhem and Aker were blinded. Then, as light and sound died, they saw again through blinking eyes.

"Pete!" Mayhem's voice was frightened. He stared at the limp figure of Mr. Manx, slumped laxly in the chair.

"He's all right," Aker reassured, pointing toward a dial. "Only—Jumping Jupiter, look at that! You used too much power, Mayhem!"

The physicist took one look and clapped his hand to his brow.

"Good Lord, look at the instruments! I've sent Pete back beyond Egypt or even Sumeria! *He's in the prehistoric past!*"

"So is the rabbit," Aker gasped. "It was touching Manx when the juice went on, and the current was transmitted to its body. The rabbit's ego is back in prehistoric times, too!"

It was true. Both Manx and the rabbit were utterly relaxed. The casual observer would have lost his casualness and called the dead. They were not, of course, as Mayhem realized. But matters were still far from satisfactory.

The delicate transformers, overburdened by the current, had burned out. Dr. Mayhem reeled slightly.

"It'll take hours—maybe longer—to fix the machine. How can Pete survive in such a savage environment?"

Aker grinned nastily.

"I shouldn't worry about that if I were you. Don't forget, he'll be occupying the body of a savage himself."

"That's true," said Mayhem. He blinked in dismay as a startling thought struck him. "And so will the rabbit!"

CHAPTER II

Manx Goes a Way Back

A TALONED, furry claw was approaching the nose of Mr. Manx. Pete stared up with bulging eyes. He tried to lift his hand to shut out the sight of the horrid thing, but it seemed impossible. Beyond the claw he could see tree-tops and a blue sky. Apparently he was lying on his back, and a disembodied talon was about to clutch him by the face. Mr. Manx found his voice.

"No!" he babbled. "Don't! I'm too young to die! *Yah!*"

The claw had flattened itself over Pete's eyes. Yelping, he lifted his left hand and pulled it away. Once more he could see, but he rather regretted it.

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There were two claws now. One was clutching the other by the wrist.

"I knew it," Pete said with conviction. "I've gone batty."

He realized abruptly that he wasn't talking English. The time machine, of course, enabled Pete to take over the memories of the body he was occupying, as far as language was concerned. In Egypt he had spoken Egyptian, Latin in Rome, and so on. But this tongue was unique. It sounded like a dog fight. Grunts, groans and cackles barked from his throat in an off-key cacophony.

Worst of all, perhaps, was Pete's sudden discovery that the two claws were his own.

He rose weakly and looked around. He was in a leafy forest, with towering trunks overgrown with lichen. Gigantic ferns were all around him. Water poured tricklingly from something nearby.

Realizing that he was tremendously thirsty, Pete staggered toward the sound. He came out beside a little brook pool. He flung himself down and drank thirstily. Then he happened to glance at his image. He drew back slightly, paused, staring. A long, quavering moan issued from Pete's thick, jutting lips.

"Oh-h-h-h-h!" he gurgled. "It's that cockeyed time machine. I ain't nuts. I'm a monkey!"

This was not quite accurate. Pete wasn't as handsome as a Cro-Magnon, nor was he as brutish in appearance as a Neanderthaler. His forehead was low, and beetling brows thrust out like hairy awnings over his savage little eyes. His nose was a mere lump like a Brussel sprout, his fanged mouth made up for it in size. Pete was distressed to note that he was slobbering.

"I ain't neat," he groaned, gaping down at his shaggy body. His clothing consisted of the skin of some beast tied becomingly about his wide middle. It was there merely for the sake of fashion. Pete's furry figure didn't really need it.

A hoarse panting caught his attention. He couldn't have missed it. Manx glanced over one furry shoulder. He was appalled to discover a tiger lurking right behind him.

It was distressingly large, and had teeth like sabers, Pete thought with unconscious accuracy. It was, in fact, a saber-tooth. Its tail was twitching significantly as it crouched lower.

"Beware, Ulg!" a voice shrilled from somewhere in the forest. "Behind you—the striped death!"

The tiger's tail stiffened, and Pete, frozen with horror, gasped weakly. He saw the glaring amber eyes intent on him. A thread of saliva hung from the sharp-fanged mouth.

The monster coughed — and charged!

PETE was crouched on hands and knees beside the pool. He acted almost instinctively. There was no time to escape, so he simply turned a somersault and fell into the pool.

Luckily it was deep, and Pete struck out desperately under water for the other side. His skin crawled with the expectation of vicious claws. If the tiger could swim, Pete Manx was sunk in more ways than one.

He came up sputtering, risked a glance over his hairy shoulder. The big cat had paused at the pool's edge, and was snarling. It tentatively dipped a paw into the water and then drew back. Suddenly it made up its mind. It hurled itself after Pete.

But by this time Manx had reached the other side. He scrambled forward, his eyes searching desperately for a refuge. He could see only the trees, and the great ferns.

The voice from the forest came again, shrilly.

"Climb, Ulg!" it warned. "Climb the tree!"

That sounded like good advice. Pete had never been an acrobat, but his new body was unexpectedly agile. He went up a trunk like a monkey—a simile which struck too close to home to be entirely pleasant. At a safe height he paused. Clinging to a branch, he looked down.

The saber-tooth was pacing around the bole, spitting and snarling, staring up with hunger in its baleful amber eyes. Pete relaxed. In a low, fervent voice he told the tiger what he thought of it.

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Leaves rustled. A gray, shaggy figure swung down from above and clung beside Pete. A face almost identical with his own twisted into what was apparently meant to be a friendly grimace. Manx drew back involuntarily.

"That was close," the newcomer observed. "I thought he had you. You're not usually careless, Ulg."

Pete thought fast. He was, it seemed, inhabiting the body of a prehistoric man named Ulg. By this time Manx had a reasonably good idea that he had gone pretty far back in time.

Obviously something had gone wrong, as usual, with Mayhem's time machine. The physicist would eventually repair it and rescue Pete. But in the meantime, he would have to walk warily. The first thing was to find out the whole setup—just who Ulg was.

"What now?" Pete asked cleverly.

"I came to tell you that the chief, your uncle Burl, has gone mad," said the newcomer. "He hops and eats ferns, and squeaks at us when we approach him. You must come back to the caves and fight Grul."

Pete strove to figure it out for himself.

"Oh," he said slowly. "Grul wants to fight me? Why?"

"If Burl is mad, he cannot be the chief. You have always said you would be the next chief, and would kill anybody who opposed your rule. Grul says he wants to be chief, so—" The furry shoulders moved in an expressive shrug.

"Grul can be chief, if he wants," Pete said hastily. "Politics is out of my line."

"But Grul wants to kill you, anyway. He does not like you since you tore his left ear off three moons ago. He sent me, Shak, to find you."

"Thanks," Pete responded, "but I don't think I'll go back to the caves, Shak. I'll just hang around here for awhile. Can you imagine a guy getting sore at me for a little thing like that?"

But he knew that was just bravado. Ulg must have been some sweet kid! How many enemies would he have in camp?

"NO man can live in the jungle at night," Shak said, with a shake of his head. "You know that. It's certain death. Only in the caves are we safe. Come back and kill Grul and then we can have dinner if I can find a rat or two."

Manx found himself disliking his bird-brained companion. Shak was entirely too naive. He scratched his flank contemplatively and found a flea. He considered it with some interest, and then ate it, after politely offering it to Pete and meeting with abrupt refusal.

The definitely ex-barker considered. After further questioning, he realized that Shak was correct. To remain in the forest after dark would certainly be fatal. The ferocious carnivores that roamed by night couldn't be ignored. Unless Pete returned to the caves, his doom was sealed.

"Like a blackout in Hell's Kitchen," he moaned. "Just the same, I'd take my chances here if only I had a typewriter."

"Typ-rhyyder?"

"Gat. Tommy-gun. The things that bring Frank Buck back alive."

"You," said Shak solemnly, "are mad, like your uncle. You say strange words."

Pete grunted. He was thinking deeply. The setup, after all, wasn't so bad. He felt firm confidence in himself and in his ability to talk with glib effect. Grul was probably just an overgrown monkey, anyway. He could be oiled along—that is, if he really was as dumb as Shak, who was now engrossed in nibbling aimlessly on his toes.

"Come on," Manx urged. "The tiger's gone. Let's pick 'em up, pal."

This utterly confused Shak for a time, but at last he understood. Together the pair climbed down and set off through the primordial forest.

It was an eerie place. Strange noises were continually heard. The jungle abounded with life. Huge, lovely butterflies hovered over bushes that were like nothing he had ever seen. Incredibly large dragon-flies darted here and there. That was where Johnny Weissmuller would have felt quite at

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home, Pete decided. He was interested in the fact that there were no flowers in evidence, though he didn't know why.

It was the Age of Mammals. The Carboniferous Era had passed into unwritten history, and the great reptiles were long since dead. As time goes, Pete had not gone very far into the past—merely to the dawn of intelligence in anthropoid mammals. But at the moment he felt billions of light years away from Times Square and the comfortable tumult of Broadway.

The two emerged from the forest and faced a rising slope, ending at the base of a steep cliff that was pitted with black cave-mouths. A group of shaggy figures were gathered about a fire some distance away. Shak led Pete toward the flames.

"Look," he said, pointing. "Your Uncle Burl. He is mad."

Burl was the largest man Pete had ever seen. He was all hair, muscle, height and breadth, with a displacement like the *Queen Mary*. The monstrous form squatted beside a clump of ferns not far away.

Abruptly Burl looked up. He squeaked and moved with extraordinary hops around to the other side of the ferns. Pete's jaw dropped as he remembered something.

"Oh-oh!" he whispered. "That rabbit back in the doc's lab! I'll bet that rabbit's ego is in Burl's body."

PETE'S shrewd guess was correct. The former chief of the tribe was now nibbling ferns and twitching his nose nervously.

"Come along," Shak urged.

They went toward the fire. Those around the blaze looked up at the newcomers.

One man rose—a huge, barrel-chested giant, only slightly smaller than Burl, the former chief. He was entirely covered with reddish hair. One of his ears, Pete noticed, was missing.

Manx gulped and quickly pretended to be clearing his throat. He smiled placatingly as he moved forward, Grul didn't look any too smart. He just stood there, blinking little reddish eyes, with his mouth open. Pete waved his furry hand amiably.

"Hiya," he said in a tight voice.

"Nrgh!" Grul responded. "I kill!"

He plunged toward Manx, who let out a shrill cry and hurriedly scrambled out of the way. There was a flat-topped boulder conveniently near. Pete sprang to its summit. There he paused, staring around nervously. Apelike faces watched him with casual interest. Grul walked forward, gritting his teeth loudly.

"Now hold on!" Pete said loudly, making a few quick passes in the air. The tribe stared. Grul hesitated and mumbled something murderous.

"I kill—"

"Just a minute!" Pete went into a barber's spiel by force of habit. He bent, clutched at the ground, and brought up a clenched fist, holding it high. "Ladies and missing links! I invite your attention. I have a message of vital import to man and—er—beast."

Pete paused anxiously, but nobody seemed insulted. Grul was glaring, open-mouthed, baffled.

"Now look, pals." Pete's voice became softly ingratiating. "I ain't trying to sell you something. I'm trying to help you—all of you." He eyed his clenched fist and opened it suddenly, to reveal nothing. "See that, folks? Nothing at all! That shows it's easy to trick people, just like you were fooled, Grul, old boy. You thought I didn't like you, eh? Now look, pal, I just want to show you how wrong you were."

"Hah!" Grul remarked. "All the shes like you. They do not like me. I kill."

He extended unpleasantly long fingers toward Pete, who shrank back in terror. Abruptly he felt something being pressed into his hand. Looking down, he saw that Shak had surreptitiously slipped him a sharp little knife chipped from flint. An idea sprang full-blown into Pete's mind.

"Hold on!" he yelped. "Listen, Grul, you got the wrong slant altogether. The whole trouble" — he pointed to the giant's crop of bristling beard—"is there. Dames don't like whiskers. They hide your beauty. Back where I come from—uh—I mean there's a famous poem illustrating the

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point. 'Never let your whiskers wave. Shave 'em off with Flint-o-shave,'" Pete improvised hurriedly. He threw all his persuasive ability into the argument. "It's painless, too. You've got a Barrymore profile—but nobody can see your mug behind that bush. Just let me demonstrate—"

CHAPTER III

The Hottest Climate Yet

GRUL was tempted and fell. He sat down nervously on the rock. Growling under his breath, he watched suspiciously as Pete smeared bear grease and water on the red beard and gingerly applied the knife. Gradually half of Grul's face emerged from the underbrush. Pete kept up a running comment designed to distract his patient's attention.

"See how simple it is, pal? How'dya expect to get sun-tanned unless you shave? See how you look now—a ringer for King Kong. One of the handsomest guys I know," Pete amended, and shaved away with greater confidence. "Facial, massage, shampoo— Boy, all you'll need is a manicure. Just—"

At that moment the blow fell. Pete had grown much too confident for his meager skill. The sharp flint sliced neatly through the red hair. But it continued from there, and went on to slice a good-sized hunk of epidermis from Grul's jutting jaw.

Half-shaved, Grul stood up and batted Pete over the head with a hamlike fist. The clout knocked Manx end over end. Before he could scramble to his feet, Grul was swarming all over him.

"Help!" Pete squawked, striving to keep his opponent's teeth from his throat. "You can't do this! It's illegal!"

"I kill!" Grul snarled, and did his best to make good the threat.

Pete frantically kicked the red giant in the stomach, whereupon Grul seized a large rock and beat his barber over the head with it. The world started to spin around. . . .

Pete let himself go limp, playing possum. Through narrowed eyes he watched the brutal face of Grul twist into a frown. The giant hesitated, drew back. Pete's muscles tensed.

"He lives!" somebody said. "Will you kill him now?"

"No," Grul refuted. "Tonight we shall cook and eat him. Till then—" The cave man moved swiftly.

"Hey!" Pete gulped.

He said no more, for a rock bounced off his skull, and the lights went out for Mr. Manx.

He woke up in approximately the same position. Shak was squatting on his haunches, devouring part of an auroch. He grinned toothily at Pete.

"Ow, my head," Manx groaned. "Where's that Galento?"

"Who?"

"Grul."

"A tiger carried him off," Shak said. "Must have smelled the blood from when you cut Grul's cheek. It was smart of you, Ulg. You are the chief now."

Pete blinked, dazed. It seemed too good to be true. But Shak assured him that it had actually happened. A huge saber-tooth had bounded into the clearing, smelled the blood on Grul's jaw. Seizing the man, it had leaped back into the jungle. That, apparently, was that.

The whole tribe, Pete noticed, knelt in a circle. They were banging their heads on the ground. He gulped.

"You mean—I'm the boss? The big shot?"

Shak nodded and grinned. Pete took a deep breath.

"Then," he said grimly, "there's going to be a New Deal, starting right now. Yeah! A *Blitzkrieg*, pal — and watch my dust!"

TWO days later, a transformed Pete Manx strolled about the camp. He had painfully fashioned shirt and shorts from the skin of a deer, and the other missing links were clothed similarly. It had been hard work, and the line of hairy men who stood solemnly in a row were far from sartorially perfect. But it was, at least, a start.

"Right—dress!" Pete roared.

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Several dozen arms and heads flipped busily. Unfortunately the tribe didn't know right from left.

"Patrol Leader Shak, report!" Pete ordered.

Shak stepped forward, saluting.

"All present, Ulg—I mean sir."

Pete eyed the man's uniform narrowly.

"Hold on. When I made you Patrol Leader, I sewed two stripes of white rat fur on your sleeve. What happened? Where are those two stripes?"

Shak wriggled miserably. Under Pete's baleful glare he blinked embarrassedly.

"I—I ate 'em," he finally confessed.

Pete spoke at some length. When the air had cleared, he dismissed the troop. He stood watching them, feeling a strong sense of satisfaction. Shak was instructing three rookies in the art of making fire by friction. Farther away, two others were sending each other messages by means of semaphore flags. They certainly were doing it badly.

Others were practicing first-aid on an unwilling patient. He was finally subdued by the simple expedient of beating him over the head till he lay limp and was an actual patient.

Pete clucked happily to himself, and turned at a sound behind him. Grul was loping forward, a gaping scar on his left arm. The red giant's teeth were bared in a vicious grin.

Pete's stomach turned over sickeningly. He gurgled.

"Grul! But—but—"

"I killed the tiger," stated Grul, licking his lips unpleasantly. "With my bare hands. And now—tonight—I shall kill and eat you, as I did the tiger."

With that he sprang upon Pete and choked the horrified ex-barker into unconsciousness. Manx's last thought was a vain regret that he had not remembered to invent the bow and arrow. . . .

SOME time later, Cave Man Manx recovered. Flickering firelight was gleaming in his eyes.

Rising unsteadily, Pete started. A huge figure bounded away toward the back of the cave in which he stood. It was Burl, the former chief, now motivated by the ego of a rabbit. Apparently Burl was destined for the same fate as Pete.

The cave had evidently been used as a storeroom. Piles of old hides, stacks of wood, clay pots, and various other primeval objects were scattered here and there. A fire was burning nearby. The cave wasn't a large one, and Pete went toward the circle of blue sky that marked its mouth. He peered down and shuddered.

The ground was unpleasantly far below. The tribe was still squatting about their fire, and it was late afternoon. What had Grul said?

"Tonight we shall cook and eat him."

"I'm getting out of here!" Pete remarked—but it was more easily said than done. The cliff outside the cave mouth was absolutely perpendicular. A line of pegs, stuck into holes cut in the rock-face, extended up from a ledge forty feet below. But the uppermost dozen pegs had been removed, making Pete a prisoner. Above him the cliff beetled out. Obviously there could be no escape that way.

Burl squeaked and hopped into a corner as Pete came back, scratching his head. What now? He couldn't get out of this prison and there was nobody around for him to talk his way out. What was left? At dark Grul would come for him—and Pete would find himself the *entrée* at the feast. Frantically Manx's eyes scanned the cave in the hope of discovering some weapon. But his search was futile.

Pete threw more wood on the fire, and then his eyes brightened. If Grul could only be frightened! If Pete could somehow manage to arouse the red giant's superstitious fears, that would be far more effective than any weapon. Yet—how?

Pete examined the pile of skins in the cave. His attention was caught by the horned head of a bison, auroch, or buffalo. It was rather mangy, but the horns curled out terrifyingly. An interesting masquerade costume might be constructed from it, with the aid of a few strategically arranged skins. But that wouldn't be enough.

The sound of lapping came to Pete's

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ears. Turning, he saw Burl crouched toward the back of the cave. His face was buried in a little spring that rose silently to vanish in a hole in the wall. Abruptly Pete's eyes widened.

"Eureka!" he whispered. "Maybe — Yeah! If it works, I think I got something!"

He had fire and water. For some reason that reminded Pete of his days barking before the Fun House at the amusement park. Suckers used to stand and gape when a horned devil arose through billowing white clouds, in an alcove above the ticket booth. An old stunt, and plenty corny, but—cavemen might fall for it.

PETE went to work. He didn't know how much time he had, but the sun was ominously near the treetops. Swiftly he found all the pots he could and brought them to the spring. He filled them with water, after replenishing the fire.

Gluey yellow clay lined the banks of the little pool. Pete used it to seal the mouths of the water-filled pots. He went back to the pile of wood and selected a number of hollow bamboo poles.

The giant bamboo of prehistoric days towered as high as the great redwoods. Each segment, Pete saw, was about fifteen feet long—quite sufficient for his purposes. Selecting a dozen of the straightest of the hollow tubes, Pete brought them to the spring. He hastily went to work.

Each bamboo shoot was inserted in one of the water-filled pots. He packed clay about it, so the sealing was complete. After that, Pete baked the clay at the fire, taking pains not to burn the bamboo. He sent apprehensive glances toward the cave-mouth. It was nearly sundown.

As darkness fell, Pete grew more and more apprehensive. What if the clay pots failed to hold? Obviously they weren't very strong. Well—there was only one way to tell.

Finding a sharp piece of flint, Pete whittled wooden stoppers for the bamboo tubes. He arranged the pots in the fire, and laid the poles fanwise toward the mouth of the cave. They just reached it, as Pete had planned.

Burl squeaked sadly and cowered against the wall. From below, loud shouts arose. The cavemen were becoming hungry.

The sun vanished behind the jungle fringe. Twilight deepened. Pete anxiously examined the pots. The clay was still holding. He fitted his stoppers into the bamboo tubes and then hurried to the pile of skins, selecting one of the largest. This he tied about his body. Struck by an idea, he added a dozen more, until he looked like a furry ovoid topped by a bullet-shaped head. The more grotesque he appeared, the more effective would be his stratagem. *If* it worked! Time dragged. From below, loud shouts still drifted up. Pete hovered frantically about his gadget, examining it with anxious eyes and fingers. So far it was working all right.

Burl squeaked. Pete waved at him with an assurance he didn't feel.

"It's okay, pal. Just relax. We've got 'em licked—I hope. . . ."

The moon rose. Simultaneously, suspicious noises were heard. Pete crept to the cave-mouth and peered over, holding the auroch head in one arm. The cavemen, led by Grul, were climbing up toward him. Their shadows slanted blackly along the steep cliff face.

Pete drew back sharply. The auroch head banged against a rock. One of the horns fell off. It rolled toward the brink. Manx caught it just in time.

HE peered at it. Pretty old. It was hollow, in fact. It looked like—like a horn! Pete's eyes widened. He put the tip of the hollow horn to his lips, hesitated, and took a deep breath.

Then, abruptly, he felt a curious shock of disorientation. Briefly he felt himself falling, and the moonlight swam vaguely before his eyes. He saw, phantomlike, the walls of Dr. Mayhem's laboratory. . . .

Like a ghostly vision, it faded and was gone. Nor did it reappear. Pete felt weak with disappointment. For a moment he had hoped that he had been rescued, that Mayhem had got the time machine repaired. But it was not to be. Pete had to get out of this mess

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without anybody's help. He reached for the auroch head.

The tribe climbed up, Grul leading the way. They reached the ledge, passed it, and kept on. Grul drew some pegs from a pouch at his side and inserted them into the holes in the cliff face. He climbed more slowly now, and his long teeth were bared in a grin of anticipation.

CHAPTER IV

The End of the Ulg!

GRUL'S furred hands reached the lip of the ledge. The red giant drew himself up. He could see nothing but the fire inside the cave, and some lengths of bamboo that lay on the rock floor. He waited, crouching lower, while several fuzzy heads bobbed up behind him and blinking eyes stared.

"He is trying to hide," Grul stated. "Come. We shall kill and eat both, Ulg and Burl."

The tribesmen started to clamber over the ledge. Then, without warning, hell broke loose!

A hairy devil bounded out of the shadows. It skipped to the bamboo tubes. With urgent haste, it bent to fumble at them. Grul's jaw dropped. Before he could gather his wits, a stinging, searing pain blinded him.

White clouds gushed out, spurting, aching, flame-hot! Steam, built up in the sealed clay pots in the fire, shot through the bamboo tubes as Pete pulled out the plugs. Clouds of hot steam rolled out, red-tinged by the flames farther back.

Nor was that all. The hairy devil —huger than a man, with a single horn projecting from its misshapen head —had raised another horn to its muzzle. The ear-shattering bellow of Pete Manx's improvised trumpet skirled out. Hideously discordant, it was obviously the hunger cry of a night-demon preparing to spring upon the horrified cavemen.

The men screamed in fright. The ones farther down the cliff could not see into the cave. Nevertheless, they noticed the clouds of steam rolling out and heard the horn, as well as the shrieks of their fellows. The tribe cascaded down the cliff like a waterfall, howling in terror.

Success went to Pete's head. Only Grul remained facing him, and the red giant was preparing to scramble down to safety. Pete made the error of trying to kick Grul in the teeth.

The caveman's reactions were instinctive. He blocked the blow, and his taloned fingers gripped Pete's leg. Manx tottered, yelped, and fell. The auroch head went rolling across the cave floor.

The clouds of steam were dying. Grul, blinking, stared at the astonishing sight before him. The demon's head was gone, and in its place was —Ulg's unprepossessing face.

Grul did not try to puzzle out the why or wherefore. He had a single-track mind. Consequently he bellowed in enraged fury and sprang at Pete.

"Hey!" Mr. Manx objected, as iron fingers sank into his throat. "Wait a — *Urk! Uggle!*" He said no more.

"I kill!" Grul roared.

Desperately Pete Manx tried to tear away the talons. Flat on his back, encumbered by the furs, he could make no real resistance. The face of Grul swam before his eyes. Pete gave himself up for lost.

Then, suddenly, Grul went away. He was merely picked up. He dangled in mid-air, kicking helplessly. Wheezing and gasping, Pete sat up, staring with bulging eyes. The red giant was held prisoned in the mighty grip of —Burl, the chief!

But Burl was insane, a caveman with the mind of a rabbit! Yet there was no madness in the chief's eyes. And there was, Pete thought, sound logic in Burl's remarks as he expressed his intention of tearing Grul into bits.

Abruptly Manx realized what had happened. Dr. Mayhem had repaired the time machine. The rabbit's ego had been returned to its normal time sector, 1940. Burl was himself again!

Pete applauded weakly. Grul was putting up a game battle, but the outcome of the struggle was already apparent. It became certain when Burl

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clouted Grul over the head. The incredible blow sent the red giant hurtling against the wall with a thud.

The vibrations of the thud didn't die. They grew stronger. Pete was conscious of a weird shock, a familiar sense of disorientation. The firelight faded before his eyes. . . .

Just before he lost consciousness, he realized Mayhem was bringing him back to his original time sector.

LIGHT came—blazing sunlight. Pete realized that he was standing on a crowded sidewalk. He moved aside because pedestrians shoved him out of their way. What had happened? He wasn't back in the laboratory.

He looked around. A signpost caught his eye—Central Park West and 65th Street. Central Park was just across the street. What had gone wrong?

Suddenly Pete guessed. He bought a paper. One glance at the date-line told him the truth.

Mayhem had not forgotten the original purpose of the experiment! Instead of bringing Pete back to the hour of the test in the laboratory, he had brought him back to the day before. Pete was in yesterday!

A column on the front page of the paper he held caught his eye.

"Kentucky Derby to be run today. Track clear—"

That meant that Pick-me-up had not yet won the race. But he would, perhaps in a few hours. Before that time Pete had to lay his wager. He fumbled in his pocket.

Less than a dollar in silver. In the wallet that he discovered in his coat, he found thirty dollars in bills. There was a driver's license that made him blink in amazement. It bore the name of—Professor Aker!

Naturally, when Pete went back through time, his mind had entered the body of somebody else. But Aker, of all people! Yet this was what had happened, as a glance in a nearby shop window proved. The reflection was that of the paunchy, dignified man with pince nez and a grim expression.

Pete thought fast. In the past, both he and Professor Aker had traveled into time. Perhaps because of that there existed some mysterious psychic affinity between them. That might explain a little. Yet the important thing now was Pick-me-up.

And that meant money. Laying thirty bucks on the nose of a sixty-to-one shot would make Manx die a thousand deaths all the rest of his life. Frantically Pete searched Aker's pockets. Nothing. The wallet, perhaps—

Aker was a careful man. He carried a blank, signed check in one compartment of the wallet. It was too good to be true. Pete found a fountain pen and filled in a four figure sum. He didn't know Aker's bank balance, and it wouldn't do to take a chance. Then he took a taxi to the bank.

Before he entered, he took the precaution of bandaging his right hand with a handkerchief. But all went well. The teller nodded affably as Pete presented the check. He watched as the pseudo-Aker painfully scribbled a signature on the back.

"Lucky I saw you sign that," the teller smiled. "Otherwise I wouldn't have let it pass. How'd you hurt your hand, Professor?"

"It ain't—isn't serious," Pete responded. "But I am in a hurry."

With his wallet bulging, he hurried away to a place he knew and proceeded to lay his bet on Pick-me-up. He wasn't feeling well. There was a strangely heavy dullness oppressing his mind, and he felt slightly drunk. It was the precursor of another journey into time, he knew. So he hastened to finish his task before he could be jerked back to the lab.

Through a haze he heard the bookie's voice. He fumbled with the wallet, but couldn't manage it. He thrust the object out.

"All of it, bud. On the nose. Pick-me-up. Sixty to one, eh?"

He didn't hear the bookie's answer. Nor did he know what came after that.

But he found himself suddenly waking up in Dr. Mayhem's laboratory.

THE rabbit was contentedly eating lettuce in a corner, apparently unmoved by his journey into the past. Pete rose from the experimental chair and gulped the brandy Mayhem

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handed him. "Thanks," he nodded. "I needed that. *Whew!*"

Professor Aker was teetering back and forth, eyeing Pete.

"Well? Did it succeed?"

"Did it! Wow!" Mr. Manx paused as a thought hit him. "Say, Prof, didn't you say you had a touch of amnesia yesterday?"

"Why, yes. In the morning. Why?"

"Nothing," Pete grinned. "Thanks for the help, Doc. I gotta scram. There's a bookie—"

"Hold on!" Mayhem's lean figure bobbed excitedly. "I want to hear what happened. A paradox like this requires elucidation. Did you really go back to yesterday?"

Before Pete could answer there was a knock on the door. A dapper, thin-faced man entered, wearing a gaudy checkered suit. His birdlike eyes probed about questingly.

"They told me I'd find Professor Aker down here," he observed. "Oh, there you are."

"What?" Aker stared. "Who are you?"

Pete pushed forward. "Hiya, Mike. You're making a mistake. Remember, I laid a thousand bucks on Pick-me-up yesterday?"

The bookie's eyes narrowed.

"What're you trying to pull, Manx? Think I'm still wet behind the ears? You ought to know better than to try anything like that with me."

"Hey!" Pete turned green. "That thousand bucks—"

"Sure. This guy Aker comes rushing in yesterday, looking ready to keel over, and pushes a grand at me to lay on Pick-me-up. Prob'ly drunk. When I ask him his name, he just looks at me. So I copy it down out of his wallet—Aker. Here y'are, mister. Sixty thousand, and the check's good."

Professor Aker accepted the check, staring at it in stupefaction. He exchanged amazed glances with Mayhem as the bookie departed.

"You can't do that to me!" Pete yelped. "I laid that grand on—"

"I'm beginning to see," Dr. Mayhem nodded, and Aker's eyes suddenly widened.

"So do I. Mayhem, do you know what this means? We can leave the college and build our own experimental laboratories!"

DR. MAYHEM beamed. "Yes, Aker. Think of what we can do on synapses with that money behind us. What equipment we can have!"

"That dough ain't yours," Pete almost screamed. "It's illegal. You're going to spend that *dinero* on rabbits and guinea-pigs?"

Mayhem lifted his eyebrows at Aker. "After all, we do owe this good fortune to Pete. Don't you think so?"

"Of course," the Professor smiled. "Ten per cent. That's fair enough, the usual commission."

"Six thousand bucks?" Pete looked ready to cry. "And I coulda cleaned up sixty thousand. I'm being double-crossed." He moaned in anguish. "I do all the work, and what do I get?"

"Six grand," Mayhem said.

"Yeah. . . ." Pete glanced at the time machine. His face suddenly brightened. "Okay. It's a deal. The gee-gees are running at Saratoga next month. Don't forget— It's a date!"

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VIA MERCURY

First of a New Series

By GORDON A. GILES

Author of "The Flight of the Starshell," "Via Venus," etc.

Ling hurled our last bomb at the monstrous beast

Expedition Number One Dares the Fiery Menace of the Solar System's Inferno—Where All the Horrors of Hell Stalk Earth's Puny Spawn!

HELLO, Earth!

Mercury Expedition Number One reporting by etherline code radio, Operator Gillway at the keys. Fifty-fifth day since leaving Earth.

Karsen, our rocket man, found it easy to plan our landing from the Martian data. Mercury's gravity is a little less than Mars', about two-fifths of Earth's. Tarnay, at the pilot board, spiraled us down on a broad flat stretch of smooth material that looks like cooled lava. We haven't stepped out yet, till we see about temperature and air.

Well, here we are on Mercury, the smallest of the nine planets. Two of Jupiter's moons—Ganymede and Callisto—are actually larger, Markers tells us. And Saturn's satellite, Titan,

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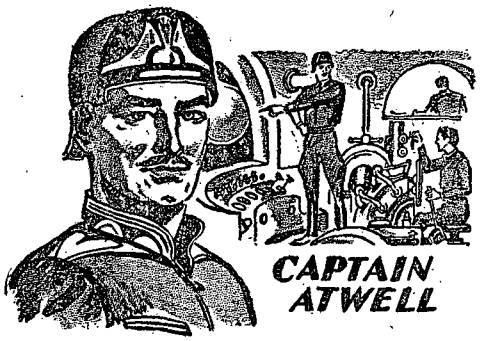

is as large. Mercury also has the distinction of being nearest to the Sun, only thirty-six million miles away on the average. We have our Sunward ports shuttered, otherwise we'd be blinded.

The view from our other ports shows a world not only utterly weird, but decidely inhospitable—tumbled, flinty rock fields, a jagged mountain range off to the side, smooth lava plateaus. No signs of life, not even a tuft of moss or a single hardy cactus. Only rock, of a thousand varieties. The horizon is short, but evidently Mercury is a barren rock. We expected that, but hoped against it.

We hardly know whether to be glad we're here. Fifty-five days in black, monotonous space is bad enough. But the Mercury environment looks just as unpleasant.

However, we're here for scientific studies. In four months, when Mercury swings swiftly around the Sun and again catches up with slower Earth, we'll leave. I think we're looking forward to that already.

Within five minutes of our landing, Captain Atwell called us together.

"Men," he said, "I'm determined this time not to let some little thing maroon us and take lives, as on Mars and Venus. We're going to plan ahead cautiously. Keep on our toes, understand?"

We all nodded. Besides Captain Atwell, three of us are veterans of the Mars and Venus Expeditions—Parletti, Markers and myself. Two are veterans of the Venus Expedition alone—Tarney and Karsen. Four are new men, to make up our full ten—Robertson, von Zell, Ling and Swinerton—official archeologist, chemist, physicist and biologist respectively.

Captain Atwell really spoke to the four new, unseasoned men. Sensing this, Ling spoke for them.

"We will be careful, Captain." And then, in his soft voice, he added: "Honorable Chinese proverb say, 'Fool see danger but laugh—last time'."

Just received the message from Mars Expedition Number Two, relayed through Earth. Thanks for your congratulations, Mars. And for giving us all the credit for your safe landing there, through our pioneering. We're glad to have done our bit.

Will resume tomorrow. Batteries low from space flight.

FIFTY-SIXTH Day.

Chemist von Zell found a thin atmosphere outside our ship. We had been speculating all through the space trip whether there would be any more than on the Moon. Since there is, Markers' theory probably holds. On the Night Side are vast amounts of frozen gases, circulating somewhat on the Day Side.

We are in the Twilight Zone, of course, named that in imaginative literature for the past century. Mercury does not rotate. It is a unique experience for us. One side eternally faces the blazing Sun. The other has been shrouded in darkness for countless ages. The narrow strip in between, where supernal day blends into absolute night, is in perpetual dusk. It is the only possible zone we could have landed in. At our left is hell-heat, at our right, frightful cold.

We stepped out today, with air helmets. Mercury's air is unbreathable, loaded with hot, poisonous vapors. Captain Atwell has had the unparalleled honor of being the first human to set foot on three planets—Mars, Venus and Mercury. He deserves it, as I think our precious chronicles have proved. He planted the Earth flag in loose shale.

Ling had warned us in advance of the temperature, one hundred and seventy-seven degrees, Fahrenheit. But so dry and wispy is the atmosphere that we felt no extreme discom-

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fort. We wore white suits of light cloth, to keep the burning rays off our skins.

We tested our jumping powers, finding we could easily soar up twenty feet. The new members got more of a kick out of it than we veterans. We had had the first thrill of light gravity on Mars.

The visors of our helmets are equipped with darkened glass, cutting down the glare. We were able to look briefly at the Sun. It is a gigantic yellow-red globe, hanging half below the horizon. It dangles there motionlessly, as it has for eons of time. It grips you to think that nothing here has changed, while on Earth all evolution took place.

"It is like realizing at last what eternity means!" Ling put it. His tiny voice, through the helmet radio, was solemn.

But we were wrong. There is change. While we watched, we saw an astounding phenomenon. A range of mountains between us and the Sun is slowly melting down! Yes, the tips gradually ran down the slopes as a watery tide. But it wasn't water. It was lead, Parletti told us—metallic lead, melting under the Sun's fierce heat. Luckily only slanting, weaker rays come to us in the Twilight Zone.

PARLETTI expanded his theory. There has been little weathering on Mercury, with its wispy atmosphere. Most metallic deposits are in virgin form, just as they cooled millions of years ago. Lead melted here, beyond the edge of the Twilight Zone. Out farther, the blistered Day Side must be a literal inferno of molten metal lakes of bismuth, tin, gallium and all the easily melting metals.

Parletti estimates peak temperatures as seven hundred degrees out there. We can't think of exploring it. Man might never explore Mercury's exposed Day Side, except perhaps in specially equipped ships. Mercury, then, according to Parletti's explanation, is not mainly rock, but a vast store house of metal!

Tarnay suddenly let out a yelp. And then we all felt it. The solid ground under our feet was heaving. What we had thought was rock was metal, and it was beginning to melt.

Captain Atwell herded us into the ship. With a blast of the rear rockets, we rolled fifty miles toward the Night Side. Looking back, we saw the section we had quitted slowly heave, bubble, and finally move sluggishly away, seeking its level. We were safe where we were. Cooling drafts of air from the Night Side protected us. The plateau was probably gallium, a metal melting at less than the boiling point of water.

That was our first day's experience on Mercury. We began to wonder if we could ever feel safe. At any moment the metal ground under our feet might turn to liquid and flow away.

FIFTY-SEVENTH Day.

Last night—our arbitrary "night" of twelve hours—it hailed. And the hail was composed of metallic bismuth. Parletti and Markers sat down to figure out what it meant. After an all-day discussion, and octant reading of the Sun, they explained. Mercury has a libration. That is, it wobbles a little. It presents a little more than half its face to the Sun during one revolution. Because of this rocking back and forth, the Twilight Zone shifts constantly.

Each forty-four days, half the revolution period, the Zone crawls a hundred miles Sunward, then a hundred miles spaceward. But there is an overlap of ten miles. So this narrow ten-mile strip was the safest area, unaffected by the advancing heat and the returning cold.

Parletti assured us we were now in that strip of safety. We could stay here four months, without danger of something melting under our feet, or the alternate cold wave. Bismuth vapor from the blistered mountains blew toward the Night Side. Meeting cooler air, it precipitated. It was no different, in principle, than the rains of water on Earth.

Captain Atwell heaved a sigh of relief. We could stay, after all, in that ten-mile strip without constantly fleeing from molten floods. Here we bur-

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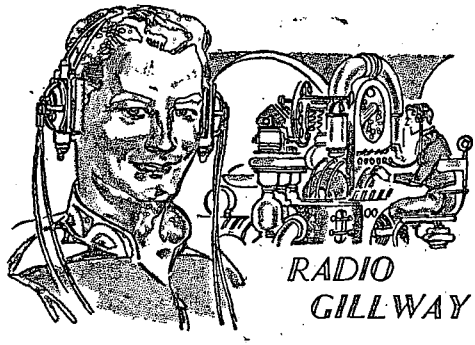

ied our fuel, as originally planned. We found a depression nearby and stacked our drums in it. We covered it with a tarpaulin, and then with loose clumps of the metal rocks.

Don't picture Mercury's surface as smooth sheets of metal. There are, after all, plenty of non-metals. These have combined with some of the metals, forming detached lumps and gravels, mostly ovides and sulfides.

Finally our cached fuel supply was safe from all accident, and particularly from heat. We had worked all day, but hardly felt it in the light gravity. Our skins, wherever exposed, are more deeply browned than ever, though we took the precautionary tanning periods out in space before arriving.

Thanks for the special musical program. It came through clear as a bell. My seleno-cells charge easily, in this constant sunlight, even better than on Mars. I've shut off the Sun power mirror entirely, having more current than I need.

FIFTY-EIGHTH Day.

We are not attempting to set up any camp outside the ship. We will be here only four months, and can stand the cramped ship quarters for that short time. On Mars and Venus, facing respectively two years and fourteen months of stay, we needed roomier habitations.

Our position seems secure. We have food, water and tanked air supplies for more than the four months. Captain Atwell has given the signal to go ahead with scientific studies.

Parletti has been wandering within a radius of a mile, with his indefatigable pick, shovel and electroscope. On Mars he found gold-impregnated sand, on Venus, radioactive deposits. Here he comes back with a knapsack loaded with gold, platinum, thallium, and all the precious metals. They lie around for the picking. Mercury, he predicts, will eventually become the mining center of interplanetary exploitation.

Markers has set up his telescope and is searching for long-speculated Vulcan, the planet that might have an orbit closer than Mercury. Trying all sorts of glare filters, he is methodically sweeping the area around the Sun. If he finds it, he says he will be more surprised than anyone. He is trying to prove it *isn't* there, once and for all.

Tarnay and Karsen, in collaboration, are taking seismographic records of Mercury's crust. They are sending sonic signals down, and interpreting them in terms of density strata. They are trying to account for the libration by proving one hemisphere heavier than the other, since there are no ocean tides.

Von Zell, with true Germanic patience, is listing all the queer, jumbled, natural alloys of the ground beneath us, forged in Nature's laboratory. He hopes to discover some that would benefit Earth industry.

Ling is measuring the invisible waves of electrons that shower down from the Sun spots. These Sun spot barrages disturb radio communication on Earth, and create the Aurora Borealis. On Mercury, they surround every mountain tip with incredibly beautiful color effects. These are invisible to the naked eye, in the Sun's strong glare. But Ling is taking pictures with special color filters.

Paul Swinerton is as zealous a biologist as his brothers, Charles and Richard Swinerton, were. They gave their lives on the expeditions to Mars and Venus. But they at least had something to study, in the way of life-forms, before the end. Here, Paul Swinerton raves bitterly, there isn't even a microbe.

Robertson, the archeologist, is still worse off. If there aren't even plants

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or insects, there were never any higher life-forms—no rational creatures, no lost civilizations. Just a while ago, as we ate together, he suddenly asked a question sharply.

"Where are the pyramids?"

We all realize what is lacking. We found pyramids on Mars and Venus, built by the ancient Martians. Records vaguely told of their presence on Mercury. We would be startled *not* to find them here.

Robertson begged Captain Atwell to let him explore beyond sight of our ship. Atwell pursed his lips, but gave no definite answer. In keeping with his policy of caution, he is probably not yet ready to risk an exploration to unknown parts. He wants to bring us all back to Earth alive.

Hello, Mars Expedition Two! Received your relayed message. Glad to hear you stopped an attack of the warrior ants with the light cannon you have along. Wish we had had them. We wouldn't have lost Proosett and Cruishank. If you locate their graves, with the Earth flag painted on boulders, say a word for us. They died heroes.

FIFTY-NINTH Day.

Startling news, Earth! Two big surprises. No, just one, because after all we expected the pyramid. The other is—life.

Captain Atwell consented to an exploration this morning, at the insistence of both Robertson and Swinerton. He went along with them, to balance their inexperience with his veteran sagacity.

They went parallel to our latitude, inside the Twilight Zone, covering fifty miles in five hours. You can move on Mercury like a fast kangaroo. They found the pyramid perched on a hill, limned against the bright sky. Coming on it suddenly around a boulder, Robertson gasped and then ran for it like a demon. To his credit, he stopped when Captain Atwell sharply called him back. They approached it cautiously. One can never tell what danger lurks—our cardinal rule.

But there was no danger. The pyramid was deserted, ancient. Robertson looked at it almost reverently. It reared like a symbol out of time's mists. The Martians have been here before us. Twenty thousand years ago, Robertson estimates.

Again the strange mystery of it brooded over the scene. Halloway and his experts, on Earth, have partially deciphered the crypt records of both Mars and Venus. We know now that the Martians colonized and roamed through the Solar System, as late as ten thousand years ago. But what happened to them? Why did they abruptly vanish from the scene, to leave only their almost eternal pyramids?

The answer might lie within this one. But Atwell pulled Robertson away. Another time for that, since they were on rationed air for their helmets. At that moment, Swinerton let out a wild yell, which I heard through connection with his helmet radio.

Walking around the pyramid, they had come on something else, beyond it—a long sunken valley, so deep that it was in full shadow. At the edges were algae. Swinerton knelt and cuddled them in his hands. The first signs of life on this incredibly barren planet! The rest of us don't wonder that he nearly went crazy with excitement.

They looked down only long enough to see a sort of mist lying throughout the valley. Denser air, Swinerton surmises, and water vapor. A general green color promised much more plant-life below, though they could see no detail. Swinerton swears he saw something move.

Then Captain Atwell forced Swinerton away, almost at the point of a gun. He herded Robertson past the pyramid, and they returned. We are all too excited to sleep now. Indigenous life on Mercury. But what kind, on a planet whose soil can only be heavily loaded with metals? And the pyramid link to the enigmatic past....

We were proud to receive that broadcast from Polaris. We've never heard the song, "Hail, Men of Space!" rendered better than by the Antarctic choir. Antarctica was the last frontier on Earth, before we went into space. Thanks.

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SIXTIETH Day.

This morning a party of five made the trip again. The lure of mystery—both of life and the pyramid—was there. Robertson and Parletti examined the pyramid. Captain Atwell went on with Swinerton and Ling, down into the valley.

To report briefly on the pyramid, Robertson and Parletti found no immediate entrance. So they contented themselves with taking measurements. Also, they took photos of the inscriptions around the base.

Captain Atwell and his party cautiously descended the slope of the valley, guns ready. The lower they went, the more life appeared, from algae, to moss, to rudimentary ferns and clumps of bushes. Finally, toward the center ten miles along, grew a forest of reeds fully two hundred feet high. In Mercury's light gravity, the thin stems can support a tremendous height of foliage.

Swinerton kept up a running fire of disjointed conjecture. Ages ago, Mercury rotated, he said, and supported a flowering life in what would correspond to our arctic and antarctic, here equatorial. When the rotation finally ceased, this withered away. Only a remnant survives now in the narrow strip of the Twilight Zone. Sunken valleys protect it from the blistering Day Side and from the deathly cold of the Night Side.

Swinerton wondered how much of the animal life had survived. Watching and wandering, they saw. Insects buzzed about, amazingly large ones, the size of song birds. Birds, in turn, were all bigger than eagles, snapping up the huge insects as Earth birds snap up gnats. Mammals were winged. Flying wolflike creatures lumbered by, seeking prey in the universal rule of life.

One great bearlike creature, with a membranous wing spread of thirty feet, hovered over them as though contemplating attack. Then it flapped away grotesquely. It pounced on a turkey-sized bird, rended it with its claws, and savagely gobbled it down—all in mid-air. As on Mars, despite thin air, life had adopted the skies because of the light gravity. And the lifeforms are big because of one rule. The smaller the planet, the bigger is its life. Gravity is the sole yardstick of size.

It was strange and pathetic. These monsters represented the last of a planet's evolution, bound to a tiny strip of territory circling Mercury. That ring of stubborn life is eternally menaced by extremes of heat and cold on both sides.

Markers just made a remarkable discovery, back here at camp. He found no sign of the mythical planet Vulcan. But he did spot a new body. Mercury has a moon!

Earth telescopes could never resolve it, because Mercury is unfavorably situated for observation, so close to the Sun's glare. Markers estimates it as only a few miles in diameter, smaller even than Mars' two tiny moons. But still it is a moon.

It revolves rapidly, within five thousand miles, hugging Mercury closely lest the Sun's enormous gravitation pull it away. Markers suggests Phaeton as its name, the chariot driver of the Sun. Obviously no planetary body wheels closer to the Sun, except now and then a comet.

To continue the valley exploration — *Sput*—

SIXTY-FIRST Day.

Continuing today. My ether-damping unit burned out yesterday. Von Zell, when I told him, said it is probably a new Sun spot that suddenly deluged my unit with a barrage of electrons. I repaired it and added a shield.

Atwell, Swinerton and Ling saw something still more amazing, before they returned. In an open patch among the huge reeds, they suddenly came face to face with a truly monstrous creature. Scaly and winged, large as a dinosaur, it seemed curiously familiar. When a steamy breath came from its nostrils, Ling recognized it.

"It's a dragon!" he yelled. "Run!"

Ling himself ran. But Swinerton, paralyzed, just stared. When he did turn to run, he stumbled and fell. Cap-

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tain Atwell stood over him as the monster charged, and pumped shot at it. It swerved, ran past them, gaining speed. It launched itself into the air. Ponderously it flapped its mighty wings. Rising like a great airplane, it soared out of the valley and turned toward the Sun.

Atwell and Swinerton watched, amazed. Their bullets had merely scared it away. And it vanished in the distance, over the Day Side. Did it live somewhere out in that inferno?

On their return, we speculated about this incredible creature. Swinerton displayed chips that the bullets had knocked off the scales. They were flinty horn, and Von Zell labeled them as silicic in composition.

Silicic life, Swinerton surmises from that—carbonaceous tissue, replaced by the analogous silicaceous tissue. It would be able to withstand terrific temperatures. He wildly assumes that it forages mainly out on the blazing Day Side, among other silicon life-forms. He pictures it wading through pools of molten metal, perching on mountain-tops, exposed to incandescent heat.

Fantastic? Swinerton went a step further. He says its metabolism must be chemically fierce, perhaps actual combustion, with live steam powering its muscles. In brief, a living steam engine! He hardly knows whether to take himself seriously or not. Ling does.

"The fire-breathing dragon of Chinese mythology," he said moodily. "Either the Martians once brought some to Earth, or told stories of it to aboriginal man, as a threat."

"Is that why you ran from it?" von Zell asked cuttingly. "Race memory, eh?" He laughed as though Ling had presented a poor excuse for cowardice.

Ling said nothing, but the rest of us felt von Zell had spoken out of turn. There is probably just a trace of chauvinism left in von Zell, from his Germanic ancestry of the previous century. He should remember that the wars of the white race on the yellow are over. There had been a little bad feeling between Ling and von Zell before, on the space trip.

Hello, Mars Expedition Two! Just received your signal, that you've found our clay house. We lived two years in it. Almost like home to us. Parletti says to look around for a dime he lost. What he was hoping to buy with a dime on Mars, I don't know.

SIXTY-SECOND Day.

Captain Atwell is worried. Mars was quiet and menacing. Venus was tempestuous and menacing. Mercury is unexpected and menacing.

Last night a storm broke, waking us all. First a violent wind roared from the Day Side, so hot that we had to turn on the refrigeration unit. Then came a counter-blow from the Night Side, with peltings of metal hail. Our outside thermometer swung from two hundred degrees above to one hundred below, in the space of an hour. The metallic rain churned against our hull till we thought it would be sandpapered thin. It lasted ten hours. Suddenly all was calm and serene again.

Libration effects, of course, Parletti and Markers explained. Periodically the heat drafts and cold drafts clashed, from their respective hemispheres. Where they met, not ten miles from us, hot metallic vapors cooled and dropped their brushing rain. Luckily, in our overlapping zone, full day and night never come. So only the tailings of these storms are ever felt.

"The unexpected," Captain Atwell muttered. "That's our danger. Life when we didn't expect it. Mountains melting down. Storms without warning. We've escaped so far. Forewarned, we can guard against what we've encountered. But watch for the unexpected, men. We don't want to lose a life to that."

Suddenly we didn't feel so secure. What lurks around the next corner? This is the question we face during our four months on Mercury.

Our morale is high, however. Karsen noted that hours before the storm came, the thermometer fluctuated from its mean of one-seventy-seven. We can anticipate other storms, so no

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one will be caught out in one. Tarnay kept watch of the molten metal flows from the Day Side, and says no tongue of them has reached closer than five miles. Swinerton says the giant dragon probably wouldn't consider us food, and will leave us alone if we don't annoy it. We have only the unexpected to deal with.

In the meantime, our scientific work is going on. Markers is observing his moon constantly, like a loving father. Parletti and Robertson, at the pyramid, are methodically circling and climbing, step by step, looking for an entrance. Tarnay is measuring the height of the atmosphere. Von Zell is still listing the metals. He finds that some, rare on Earth, like gallium and indium, are more plentiful than iron. Karsen is cheerfully mapping the Sun spots, though at this close range they are numberless.

Swinerton, examining specimens of the plant-life he brought back, finds them loaded with metallo-organic compounds, poisonous to us. Ling, we're a little troubled about. He is moody, doing little. Perhaps he feels there is race discrimination against him because of von Zell's remark. Captain Atwell slapped Ling on the back once.

"Buck up, kid. We know your skin is yellow, nothing else." We wonder if Atwell meant it.

We've just had dinner and would like some music. Can you send us some?

SIXTY-THIRD Day.

Trouble has come—not from an unexpected quarter, but from the dragon. Four men are trapped by it, at the top of the pyramid. This morning, the four went together. Parletti and Robertson as usual stopped at the pyramid. Tarnay and Swinerton descended into the valley. Swinerton was in search of more data about the valley life. Tarnay went along for safety's sake. No man goes anywhere alone.

As Swinerton just reported it via helmet radio, they came on one of the dragon-creatures, apparently dozing. Why it should be in the valley—arctic to it—was a puzzle. It might have been driven by food scarcity in its normal haunts. At any rate, Swinerton conceived the idea of putting a bullet through one eye into its brain. Later he meant to dissect this amazing new kind of life. Tarnay's protests to the contrary, he tried it. He should have asked Captain Atwell first, by radio.

Swinerton didn't miss. The eye shattered, almost with a crystalline sound. But the brain behind it seemed unaffected by the slug. Perhaps a flintlike bone turned it aside. Enraged, the beast came after them. Further bullets had no effect.

Running desperately, s l i p p i n g among the vast reeds, Swinerton and Tarnay managed to keep out of the blundering behemoth's reach. It was handicapped by the loss of one eye. Using the power of their Earth muscles to the full, the two men got out of the valley. They scrambled up the pyramid, helped by Robertson and Parletti.

And there they are now, all four. The dragon sits at the base, waiting, bellowing its anger. It clumsily tried to climb the pyramid, but gave up. Once it lumbered into the air, trying to peck at them from above. But the men crouched against the stone safely. Thereafter it waited below.

They emptied their guns at it, without effect. Its chitonous scales are bullet-proof. The other eye was too small a target to hit at that distance. When they try to sneak down the other side of the pyramid, it spies them and moves to meet them. No Earth bear could be more tenacious with a treed victim.

All this was reported by Swinerton through his helmet radio an hour ago. Captain Atwell first grabbed up our sub-machine-gun, and then lowered it helplessly. Even if he could get within range, it still would not destroy that armored colossus.

The situation of the trapped men is frankly grim. In a few hours their individual air-tanks will be exhausted. They can't breathe the rarefied air of Mercury loaded with metallic vapors.

Captain Atwell and the rest of us are discussing all possibilities of driv-

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ing the monster away. We even think of charging it with the space ship. But But von Zell reminds us that if it can live out in the fiery Day Side, it can withstand our rocket blasts. Besides, with its steam-driven muscles, it might actually batter our ship and damage it! We can't afford to underestimate this formidable form of life that turns away bullets and breathes fire.

Thanks for your musical broadcast. I rebroadcast it through my set to the helmet radios of the four trapped men. It helped keep up their spirits. We've promised to rescue them. We don't know how.

SIXTY-FOURTH Day.

The four men are safe! They are returning now. We owe a vote of thanks to the men on Mars Expedition Two. Their suggestion worked, or a variation of it. It's strange to think of four men on Mercury being saved by advice from men on Mars, across a hundred million miles of space.

We had been about to run the ship over there, and take our chances of damaging it. Then their suggestion came—to make bombs of our fuel. We made three, packing pints of fuel in thermos containers with fulminate caps that von Zell quickly made with his chemical kit.

Captain Atwell, Markers and von Zell went out with them. Karsen, Ling and I were to stay with the ship. Karsen has only one hand. I had to keep three-way radio communication open through the ship's relay system. Ling— Well, I could see he took it hard, being told to stay back. He had run once from the dragon.

It wasn't till an hour later that Karsen and I noticed Ling wasn't with us. He had quietly sneaked out, waving his air helmet. When Captain Atwell reported being within sight of the pyramid, he gasped suddenly.

"Ling, you here? But—" After a moment he finished tersely: "All right. Keep close to us."

Captain Atwell reported his moves. The four of them crept up from the opposite side of the pyramid, out of sight of the beast. The men above, to keep its attention, waved their arms and yelled. Clambering up, Atwell and his men worked their way high enough to be out of reach of sudden attack. At last they came around to the beast's side. The crucial moment had arrived.

As the beast reared up suspiciously, they threw down the first bomb, under its feet. The impact of landing touched off the fulminate and fuel. The beast rocked back, but when the smoke cleared, it bellowed angrily and scrambled at the base of the pyramid, as though to climb. Captain Atwell hastily yet carefully tossed the second bomb. It exploded against the side of the pyramid, chipping off rock and hurling the beast back by concussion.

But it was unhurt! Any Earth beast, even the mightiest dinosaur, would have been mortally wounded. This Mercurian monster had lost only a few scales. We all realized for the first time how really impregnable it was. In a sense it was mineral life. Beside it, organic life was soft jelly, and their weapons and forces little puffs of nothingness. It had spawned and lived where furnace heat and volcanic forces reigned.

One bomb was left. If that failed, all eight men would be marooned. Some could get away by separating, but only at the loss of other lives.

Back in the ship, Karsen and I could hear the beast's roar through the helmet radio system. It sounded like the deep-throated blast of an ocean liner's steam whistle. And then we heard a new sound—dull, heavy thumps that rattled the radio speaker!

CAPTAIN ATWELL reported that these were caused by the beast. Now utterly berserk, it threw its titanic body against the pyramid, trying to batter it down. And it might. None of us was skeptical of that. Swinerton's voice breathed in awe:

"Being literally an animate steam engine, it probably develops a thousand-horse-power!"

Robertson made an additional comment.

"The Martian inscriptions at the base include this beast, represented

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with mathematical symbols and an outline of its dragon shape. They show it being destroyed, by blasting its head away completely. The ancient Martians must have set up big guns to do it."

There was a sharp exclamation suddenly, from Captain Atwell.

"Swinerton!" he called. "You fool—"

"Let go!" Swinerton yelled. "Only hope. The rest of you can escape. I caused all this."

But several of the others grabbed Swinerton and held him back. Sacrificing a life would be done only as a last resort.

Karsen and I held our breaths. We heard Ling's voice murmur softly.

"Blowing its head away—"

Ling was already scrambling down the pyramid steps, while the rest were still struggling with the almost insane Swinerton. Ling carried the last bomb! Captain Atwell shouted, but there was no answer from Ling. It was too late to catch him.

Captain Atwell described Ling calmly descending toward the beast. It had launched its tremendous bulk again at the structure, shaking its foundations. Then it spied the tiny mite and stretched its serpentine neck toward him.

Ling faced the dragon, a lone man against a mighty beast. What kind of courage that took, we can't guess. The dragon had been his childhood terror.

Von Zell's choked voice came from his helmet radio.

"And I called him a coward!"

Ling's idea was sublimely simple. He waited till the ferocious saw-edged jaws lunged for him. The dragon's live-steam breath snorted out at him. He threw the bomb straight between those gaping jaws. The first touch of hot steam within would set off the sensitive fulminate. The dragon's head would be blown apart—and Ling with it. . . .

Karsen and I heard the muffled explosion in our radio. It was followed by a curious sound, almost like the breaking of dishes. It was the creature's hard, silicic tissue flying to shreds. Then there was silence.

"Well," came Captain Atwell's low voice, "that did the dragon in, all right."

"Ling, too," murmured von Zell. "Brave Ling."

And all of us, at that moment, knew we had done the quiet, soft-voiced Chinese a deep injustice. He had conquered more than the beast. He had conquered fear. Captain Atwell spoke again, in bitter self-reproach.

"A life lost, after all—" But he was interrupted.

"Ling!" It was a startled exclamation from all of them. Ling's voice came, panting from the climb.

"Well, let's get back to the ship. Confucius has said: 'He who leaps fast, lives to leap again'."

Ling had had about three second to scuttle away along the pyramid ledge, before the explosion. Crouching against the stone, he had been untouched, except for a pelting of silicic chips. The men hadn't seen him crouching out of sight.

We're all overjoyed that he escaped, Captain Atwell particularly.

"Well, men," he said, with more feeling than his voice betrayed. "We haven't lost a life yet on Mercury. And we're not going to, as long as we watch out for the unexpected."

SIXTY-FOURTH Day (noon).

The unexpected came!

The ment went a mile from the pyramid, toward the ship, and then suddenly ran back. Captain Atwell told us why. A pouring flood of what seemed to be molten metal thundered down from the side. Barely reaching the pyramid in time, they once more scrambled up and watched. All the regions around them was filling like a lake.

But it wasn't molten metal—just mercury. A whole glacier of it had been frozen solid five miles away, touching the frigid Night Side. As the slow libration exposed it to the warmer rays of the Sun, it assumed the liquid form.

Picture it as we see it. Cubic miles of silvery metal are flooding all the region around us—almost an ocean of it. Atwell and his seven men are once

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again trapped on the pyramid, watching the level slowly rise.

Of all things unexpected, it is ironic that the namesake metal of Mercury should threaten us!

It's a real threat. The flowing mercury surrounded our ship. All ordinary metals float on Mercury, with its high density. Thus our ship was picked up like a cork and whirled off. Karsen and I felt as though we were on the stormiest sea ever known.

The mercury flood carried us out toward the Day Side, miles and miles. It has just beached us, high and dry, on a metal hillside. We have the refrigeration unit going full blast. We're a hundred miles apart. Atwell and the others are on the pyramid, Karsen and I on the blazing Day Side. Our problem is to get together.

The engine was damaged by the violent knocking around. Karsen is looking it over frantically. I have a broken arm. As soon as possible, we'll make repairs and fly the ship to the pyramid, so we can at least be together.

There is one disturbing thought. Our buried fuel reserves are under that lake of mercury! How will we ever get it out, for our return trip to Earth?

THIS will be our final contact. Your last signal came through so faintly, I doubt whether this is reaching you. We will send the usual high-powered click signal twice a day, noon and midnight, Greenwich Earth time.

We will resume contact in three months, if all is well. If we have somehow rescued our cached fuel, we'll make the return at that conjunction. Our only consolation is that we haven't lost a life—yet.

Good luck, Mars Expedition Two! Hope you haven't had any trouble. Au revoir, Earth!

Mercury Expedition Number One signing off.

Announcing

THE CHICAGO 1940 WORLD SCIENCE FICTION CONVENTION

☆ ☆ ☆ ☆ ☆

Time: 10 A.M., Sunday and Monday, September 1st and 2nd, 1940.
Place: Hotel Chicagoan, Madison Street, Chicago, Ill.

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Do you want to meet the nation's outstanding science fiiction authors, hear what such men as Eando Binder, Robert Moore Williams, Edward Elmer Smith, Ph.D., Ralph Milne Farley, and many others have to say regarding the future of fantasy?

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All roads lead to Chicago—so join with hundreds of fantasy followers all over the country in making this international celebration the greatest event in the history of scientifiction fandom!

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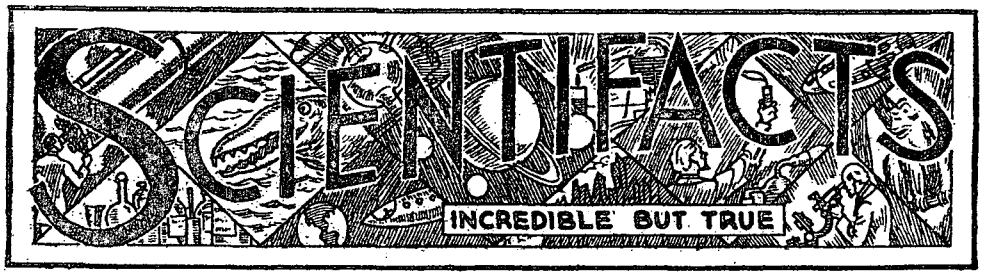


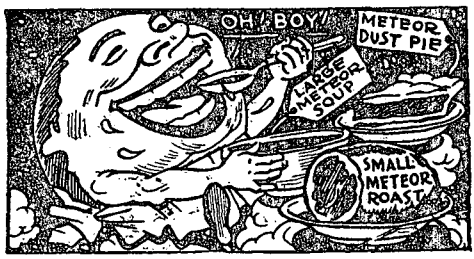
A SPECIAL FEATURE OF INTERESTING ODDITIES
by MORT WEISINGER

EARTH'S AVOIRDUPOIS

EARTH is perpetually increasing its weight!

The Earth's mass is constantly being augmented through the accumulation of the numerous meteors that land on its surface, attracted by our gravity.

We gain about one hundred thousand long tons a year in weight from



these extra-terrestrial visitors. Large meteors, small meteors, and meteoric dust all combine to make this barrage an annual load that Earth can never shake off!

NO MORE COUNTERFEITS

SCIENCE has a plan for making banknotes proof against the craftiest forger!

It is a known scientific fact that when metal-coated surfaces are subjected to an invisible ray, called "Wood's Light," the surfaces glow with a phosphorescent light tinted differently according to the metal used.

The new banknote proposed to beat counterfeiters is based on this phenomenon. It looks no different from any other, but the paper is covered with a very fine metal spray which shows immediately under Wood's Light.

Each country, a scientist suggests, could have its own combination of metals which would produce an individual color. Counterfeiting would be almost impossible, because hundreds of thousands of combinations of metals would each produce a different tint, and the spraying process would be kept secret.

STRANDS OF DOOM

THE slender thread of the spider's web is one of war's most indispensable necessities!

Without spiderweb strands, range-finders on warships as well as on land would be useless. Submarine commanders would have to launch their torpedoes by guesswork, if at all. Bomb-dropping from aircraft would lose all its accuracy.

It's all because the so-called cross-hairs in all kinds of optical instruments—gun sights, bomb sights, periscopes, range-finders, navigation instruments, transits, theodolites—are not hairs at all, but crossed spiderweb threads.

If actual hairs were used, even the finest ones would look as heavy as sticks under the magnifying instruments, completely obscuring the object instead of getting an accurate sight on it. Real hairs would also be-

come slack in damp weather and too tight in dry, perhaps snapping and leaving the instrument useless.

Nothing has ever been found to equal spiderweb threads for the making of these cross hairs. Even very fine-drawn platinum wire is too course for the really fine jobs!

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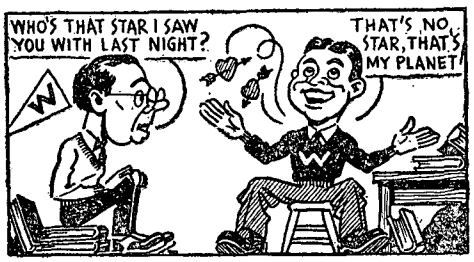
PICKING PLANETS

THE planet Uranus was not discovered by Sir William Herschel!

Today, Sir Frederick William Herschel is honored as being the discoverer of the planet Uranus. Yet he was not really the first man to see Uranus. Previously astronomers had seen and cataloged the planet nineteen times before Herschel's "discovery."

These earlier discoverers of Uranus



were as much discoverers of the planet as Columbus was a discoverer of America. But the men who saw Uranus before Herschel's time are not credited with the discovery because they mistook the heavenly body for a star and not for a planet. Herschel recognized the body to be a planet, and in so doing he received all the credit.

MICROBES AT WAR

WHEN microbes kill microbes—and save man—it's news!

Complete conquest of disease may be the eventual result of the discovery by bacteriologists, that the soil in gardens and fields contains germs capable of killing disease germs of the gram-negative group. This group includes germs causing typhoid fever, dysentery and cholera.

Another scientist recently reported that disease germs of the gram-positive group—this includes pneumonia and diphtheria germs and the staphylococci—can be killed by chemicals extracted from soil germs. Scientists feel these discoveries herald triumph over germ-caused disease.

THE STARS MOVE

THERE is no such thing as a fixed star!

The belief that there are some stars that never change their position is a fallacy. Although it may take centuries for changes to become apparent to the naked eye, modern observations prove that no star is fixed. The Sun travels at a speed of 170 miles a second for 200,000,000 years to complete a single trip around its orbit, according to Dr. R. J. Trumpler of the University of California. And similarly, this is the case with the stars of the Universe.

COLDER THAN ICE

AN "Arctic powder," colder than ice, may preserve serums, cool X-ray photographic solutions and chill the water for ice bags, in the hospitals of the future.

Recently demonstrated before physicians and surgeons, a few ounces of the powder dissolved in a glass of water dropped the temperature about 40 degrees without forming ice, within three minutes!

Under laboratory conditions, it is claimed, the temperature can be lowered as much as 65 degrees and as far as 22 degrees below zero. Water chilled in this way will remain cool for several hours.

One pound of the chemical, which can be manufactured for about one cent, is claimed to have cooling power equal to four pounds of ice!

OUR INCREDIBLE WORLD

IN his life-time, Thomas Edison patented 1,400 different inventions, but only 400 of these ever worked; no man has as yet beaten his patenting record . . . The blue whale develops five hundred horsepower swimming at twenty-seven knot speed through the water . . . Scientists have calculated that about 8 per cent of the people of white race in the world have eyes which do not match in color. . . .

A substance, compounded from graphite, when applied like paint, makes a plane invisible after it has passed an altitude of 100 feet . . . Some tiny insects can scarcely be seen by the human eye at a distance of a yard but certain birds can see them as far away as a hundred yards . . . Psychologists declare that women's favorite color is red, while men's is blue . . . Gusts of wind have been known to reach the velocity of 231 miles an hour. . . .

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MURDER ASTEROID

By EDMOND HAMILTON

Author of "Dictators of Creation," "Captain Future's Challenge," etc.

BURGIN was a better meteor-miner than mathematician, but he knew well enough that a half million Earth dollars was more than a quarter million. That was why there was murder in his heart as he steered the battered little space-cruiser toward the tiny gray asteroid.

Burgin's heavy face was impassive but there was a cunning glint in his eyes as he glanced at his partner. Steve Holt's lean, young form was sprawled in the space-chair, and the youth wore a puzzled frown as he stared into the asteroidal jungle they were traversing.

"I don't see why you want to make a landing on that little planetoid," Holt complained. "There won't be anything on it worth digging. What's a few dollars more, when we've already got such a big haul?"

Holt looked back fondly at the heavy sacks of platinum, tantalum and other rare metals in the main cabin—the fruit of weeks of monotonous, toiling exploration and mining of the Belt's meteors.

"We've been mighty lucky—that metal will bring a half million at least," Steve Holt went on, his gray eyes sparkling. "I want to get back to my family with the good news. Why don't we just head for Ceres spaceport, instead of halting at that cinder ahead?"

"Because," Burgin replied weightily, "there may be a bigger haul on that little planetoid than all we've got now."

Holt looked incredulous. "On that thing? Why, I doubt if there's an ounce of dense metal on it—it looks like another chunk of aluminum compounds."

"Yes," Burgin agreed, "but you notice its queer, skull-like shape? Well, there's a story that it was on just such a skull-shaped asteroid that old John Haddon buried his loot!"

Steve Holt gasped. "John Haddon, the great space-pirate of a hundred years ago? Why, they say his treasure was worth tens of millions!"

"Sure, and maybe this little cinder is where he stowed it," Burgin declared. "We're going to have a look, anyway."

He glanced at his young partner. His story was going over. Holt, he was certain, had been convinced by his lie. The lure of treasure had got the boy, Burgin thought with a chuckle.

The little space-cruiser throbbed on toward the tiny gray asteroid. It did have a curious skull-like shape—that was why Burgin had invented the story he had just told. The asteroid was very small, though—really no more than a meteor a few hundred feet across.

The cruiser's rocket-blasts as it contacted the tiny asteroid actually sent the minute celestial body bouncing away a little, before the ship's vacuum anchors caught and held.

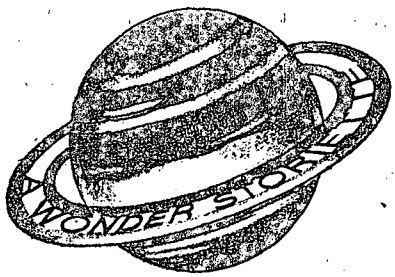
"This planetoid has less mass than our ship, even," grinned Steve Holt. "But if Haddon's loot is buried here—"

Yes, the treasure-bug had bitten quickly and deep. The youth was on fire to get out and search. So the two climbed into their space-suits, grasped their steelite prospector-picks, and stepped out through the airlock.

The magnetized shoes of their suits were no good on this cindery little world of super-light substance. Standing there beneath the star-jewelled sky of the Belt, they looked around.

"If Haddon left some kind of marker —" Holt's eager voice came over the suit-phone.

"*There!*" Burgin cried, pointing his



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arm toward a nearby hump on the pocked gray surface of the asteroid.

Holt turned eagerly to stare. It was Burgin's chance, and he took it. He raised his steelite pick and with a terrific swing, drove its sharp point through the back of his partner's space-suit and deep into his body.

Steve Holt staggered, stumbled drunkenly around, the pick still projecting from his back. For a terrible moment he looked at Burgin, his face ghastly inside the glassite helmet.

"Why—" choked Holt.

He slumped forward, sprawled on the asteroid's pitted gray surface, against the side of the little space-cruiser.

"That does for *him*," Burgin muttered, breathing hard.

The silence of the tiny planetoid suddenly became intensified. Staring down at the dead man, Burgin abruptly realized himself alone with the infinite, with the watching eyes of the stars.

"Hell, I won't get nervous now," he told himself. "This was the best way to do it—on some little planetoid like this where no one will ever land to find his body. If I'd done it in space and tossed his body out, it might have been found floating. But this way—"

He re-entered the cruiser, slammed shut the heavy door and shed his suit. He gazed with kindling eyes at the heavy sacks of metal.

"I'm worth a half-million dollars, soon as I get this stuff to Ceres spaceport," he exulted. "Me a rich man! I can take it easy, travel over the whole System in luxury. Liquor, women—"

He started up the rocket-motors and took off with a blast of fire.

He was tired, from the weeks of toilsome meteor-mining and from reaction to the murder he had just committed. Well, it wasn't far to Ceres, the big asteroid that was the rendezvous of the meteor-miners and the outpost of System civilization and law. He could set the automatic space-pilot to take him to Ceres, and be rested and ready to enjoy his new wealth when he got there.

BURGIN's sleep was not troubled by any remorseful dreams in the hours that followed. He lay sprawled in the cabin bunk while the automatic pilot headed the cruiser for Ceres. Now and then the sharp buzz of the meteor-warning half-awakened him, but each time the click of the mechanical pilot adjusting the cruiser's course to avoid obstructions reassured Burgin and he fell back into sleep.

When a prolonged buzzing finally awakened him, he looked through the prow-window and saw Ceres ahead.

Burgin took over and brought the cruiser down with a rush onto the flat spaceport that was rimmed with offices and other buildings. He saw men start to hurry out toward his ship.

"Want to know what luck we had," he chuckled. "Wait till they see these sacks."

When he opened the door and stepped out into the pale gold sunlight and thin air of Ceres, a Planet Police officer faced him.

"Well, did you strike it rich this time, Burgin?" the officer asked, noting down on his pad the ship's arrival-time.

"Did we?" Burgin crowed. "A half million in metal at least!" Then his face sobered. "But Steve Holt, my partner—he was caught in an accident. Out on a big planetoid—we were digging ore and the rock shifted and crushed. I buried him there—poor Steve."

"Is that so?" said the Planet Police man. "Then how do you account for that, Burgin? That's your pick, isn't it?"

And he pointed down to the ground beside the ship. *There lay Steve Holt's body, the pick still protruding from his back!*

Burgin stared, and heard a roaring in his ears. The ghastly realization of his own stupidity rushed over him.

He had left Steve's body on the asteroid, yes. But, as Steve had remarked, that tiny asteroid had less mass than the cruiser. So, when the cruiser took off, Steve's body had been attracted by the heavier of the two masses, the ship instead of the asteroid.

The body had clung by the law of gravitational attraction to his cruiser, all the way to Ceres, while he had slept unsuspecting. It had fallen with him to this spaceport field as he landed. And it lay now in the pale sunlight, with its dead eyes looking up at Burgin in a stare of glassy triumph.

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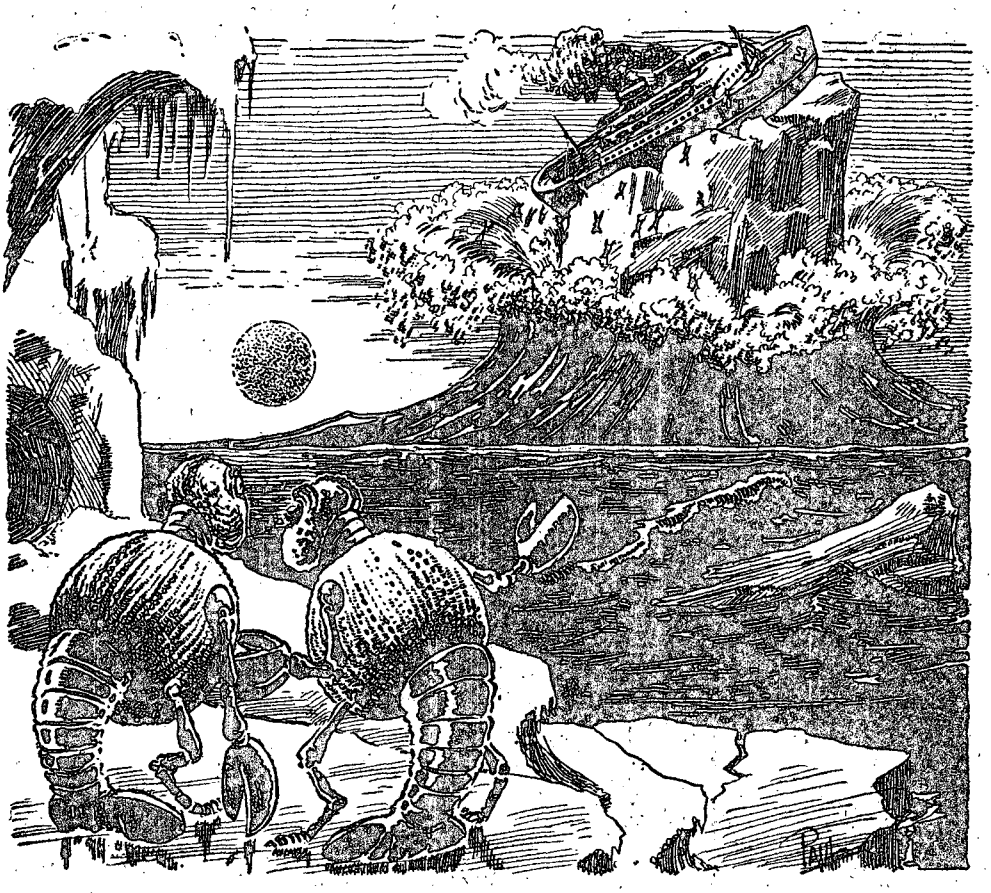
UPWARD BOUND



Again there came a mighty upheaving

The World of Mertiza Was a Liquid One—and Someone Was Stealing Its Waters!

By GERALD EVANS

Author of "Crimson Purgatory," "The Man-Stealing Mist," etc.

"WE cannot delay any longer," clipped Cromag, Mertiza's greatest scientist, to the assembled legislators. "The pressure of the water is decreasing at an alarming rate. Never has it happened before. During my lifetime it has decreased by one hundredth; during my father's lifetime, it only decreased by one hundred millionth. What then has happened? Soon, this drastic alteration in our environment will outstrip our biological adaptability, and that, Supremas, means the end of our species."

His luminous fellow legislators quivered in the crystal clear water of the Hall of Legislation. A hundred pairs of lidless eyes watched him. The President Supreme, Clavello, fluttered his fins to maintain his equilibrium. Claws clattered nervously. The legislators had expected some such pronouncement from Cromag when they had invited him to their capital, Berguise, but that it would be so grave,

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few had had reason to anticipate.

"It's not natural!" clipped Clavello, his claw trembling. He had difficulty in making his communicating pincers meet at the end. "You don't think that some creatures of the upper regions are destroying our element?"

"I do," Cromag answered emphatically. "Some creatures, alien to the depths, for their sinister operations are quite recent. But we know so little about the heights. We are on the floor of a heavy mass of water which gets thinner and thinner as it ascends, until it must become something so thin that it can no longer be termed water. There may be creatures living in this thin stuff who are stealing our water!"

"Stealing our water!" Clavello seemed unable to grasp Cromag's meaning.

How could water be stolen in a universe of water? He could not understand.

THE other legislators trembled uneasily. Cromag was a scientist who knew what he was clipping about.

"These conclusions," informed Cromag, "are not lightly founded. To begin with, we possess irrefutable evidence that this menace comes from an upper region of water. I refer, of course, to the Janlee incident, when from the heights descended a ropelike affair made of a hard material, divided into segments, which touched the bottom of the Janlee valley, and was hurriedly withdrawn. Obviously it was some kind of a feeler dropped down from the heights by some superaqueous entities."

A general clattering of claws delayed the scientist, as the legislators gave way to their agitation.

"The upper levels," continued the scientist at length, "the attenuated waters have been always beyond our reach. Immediate death through the explosion of our bodies would be our fate, if we ascended to it. The pressure is no more than a hundred thousandth of ours down here. The creatures that must inhabit these regions possess organisms of which we have no conception. That they possess intelligence—intelligence of a cunning order, is too evident. But what are we going to do about it?"

The scientist paused, then clipped on rapidly:

"Science alone can combat this menace. And clearly before we can retaliate against our strange enemies, we must ascertain their nature. That, unfortunately, can only be gleaned by actual observation."

Cromag's words brought on a torrent of incoherent snipping from the legislators. He bided his time.

"How can that be done?" inquired the President Supreme, when order was restored.

"TWO problems confronted us," Cromag explained. "First, means of rendering our observers impervious to the alien conditions of the upper reaches, and secondly, means of ascending. Supremas, never was science confronted with two greater problems. The first was essentially a biological one. I tackled it at my Austrel laboratory in conjunction with Supremas Snoma and Kreenal, two Mertizans who need no introduction to you.

"I will not bore you with the biological details except to announce that we have succeeded. You all know that the centre of 'awareness' is in our brain. Our bodies are only the feeding and expressing agents. A brain nourished artificially with mechanical appendages to enable it to move about, would feel 'awareness' like any ordinary creature.

"Working on these lines, we transferred several Mertizan volunteers to a new form. We have enclosed their brains in non-shatterable coral spheres which will prevent physiological change as the environmental pressure decreases. To these spheres we have added a second one, containing radioactive substances to feed the brain and provide energy. Externally we have added fin, leg and claw appendages, making movement and communication possible."

The legislators applauded the scientist, and Cromag waited impatiently.

"Now to the second problem," he went on, when the applause died out. "That, too, has been solved. A young Mertizan, whom you will soon learn a

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great deal about, has discovered a means of turning water into a solid."

Again there was an outburst of clipping claws as the legislators expressed their wonderment.

"Solid water?" one surprised legislator wanted to know. "Do you mean that water can be turned into something hard—like coral?"

"Yes," clipped Cromak. "By reducing it to a low temperature it becomes cold and turns into a crystal-like solid which possess the amazing property of raising in water. At this high pressure of our environment, it requires a very low temperature to solidify it, but the higher it ascends, the temperature can be many degrees higher and it will still remain solid.

"We have made huge blocks of this frozen water, and liberated them. Amazing altitudes have been obtained, and after the snapping of the measuring cord when it was played out, we have every reason to believe that the block has continued upwards to a region of water so attenuated as to be almost inconceivable.

"Supremas, the inventor of this process that solidifies water, young Mesco, is now prepared to command the first observation block, and has volunteered to be biologically adapted."

After the thunderous applause had once more died down, Cromag succeeded in gaining the full consent of the legislators to place as much wealth as they needed from the treasury at the disposal of the scientists. In addition, he was instructed to convey the good wishes of the legislature to young Mesco and those who were going to undertake the most daring exploit ever known . . .

MESCO and Cromegeen, the fascinating daughter of Cromag, glided around the misty phosphorescent town of Austrel, an oasis of light and pulsating life in the heart of the great dip in the ocean's floor. Around them, depressingly near, lay the outer regions of the great dark, with its teeming hordes of ferocious monsters.

Into those Stygian wastes, only Mertizans in the coral projectiles dared go. Until the coming of the projectiles, the great sounder lines, with their myriad repeater diaphragms had been the only means of communication with the other towns.

Mesco and Cromegeen had ventured far in their love glide, and were oblivious of their menacing surroundings. Together, with an occasional flick of their tails they glided swiftly in a wide orbit. It was their farewell glide, for Mesco was soon to leave her for Cromag's laboratory, en route to the fearsome Unknown.

Heads together, the pulsations of their "attuned" minds elevated them to that dream world known only to those who are natural mates. In that dreamy, thrilling silence they glided on. The radio-active substance of their body, agitated by their throbbing brains, increased its rhythmic beating as it drew from the water life-giving atoms in excess of their bodily stores. Their spirits were high; there was time enough to mourn when they were separated.

In great sweeps they continued their ecstatic swirl. Time was forgotten in their love theme. Thus Mesco took leave of his mate in the hush of the fringe darkness.

She watched him glide away to Cromag's laboratory for his biological transformation. She had promised not to look upon him again, and glided away with sinking feelings to her mother, at the gleaming coral house on the fringe of the town, to bemoan her lover's plight, and to clip invective against the demons of the heights. Her glide became a streak of phosphorescent gold that faded in the velvet darkness.

Cromag clipped rapid instructions to Supremas Snoma and Kreenal as they cut out Mesco's brain and transferred it to the thick coral skull, attached to a second coral sphere holding the vital radio-active substances and flexible external appendages. Cromag performed the delicate task of inducing the living tissue "roadways" to unite with the brain ganglions, so that mental energy could be transmitted to the robot body, and radio-active energy to the brain.

Cromag expressed his satisfaction on the completion of that miracle of biology, and waited for Mesco's artificial expressive claw to clip out the expected message. The scientists did not wait

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long. "Cromag," clipped the transformed Mesco, "I feel so strange. Have you succeeded?"

"Yes," acknowledged Cromag. "You are ready to attempt the ascent. Can you see well?"

"Never saw better in my life," Mesco informed. "These artificial orbs are perfect."

"Don't take to them too much Mesco, or else you won't wish to be transferred back to your old body," advised Kreenal.

"I'll be lucky to come back at all," Mesco clipped slowly, "but save my old body all the same—just in case."

THERE was a painful silence following Mesco's laconicism. Too well, all four knew the thing they were up against. If Mesco and his gallant volunteers perished, they would be but the vanguard of those to follow. Mertiza demanded that the denizens of the upper reaches should be obliterated.

The next phase was a long journey in Cromag's projectile to the valley of the Cold Currents, the Janlee dip, where the strange "feeler" had been seen.

There in a deep pit, Mesco and his daring companions awaited the solidifying of the water around them. Suprema Snoma was a little dubious.

"Perhaps," he clipped to Cromag, "it will melt as they ascend?"

"How so, Snoma?" replied Cromag. "As they ascend, the block will add itself. The higher they go, the more water will solidify on higher temperatures. The block temperature is very low."

"But the surrounding water will become too attenuated to hold it together," protested Kreenal.

"Not so, my dear Kreenal. The block is very attenuated already. But come, Supremas, we are wasting time. Of the upper reaches we know nothing."

From great coral containers heavy liquids, known as Mesco's mixture, were run into the pit. Mesco and his companions had difficulty in maintaining equilibrium as the mixture descended about them. They had maneuvered themselves to the pit's centre, so that they would be in the middle of the block.

Soon the undulations ceased, and communication between the intrepid explorers was rendered impossible by the stiffening of the water about them. They seemed walled up in a solid mass. A sphere of radio-active substance however, began to melt the solid water about them and before long all twelve explorers were afloat in a chamber of imprisoned water.

"Are you sure it won't melt through?" one of the explorers wanted to know.

"No," was Mesco's answer. "The sphere will float and only affect its immediate vicinity."

"Suprema," clipped the same explorer after a moment, "do you feel something?"

Mesco did not respond immediately. He was aware of a strange sensation.

"We are ascending!" he clipped dramatically.

In the dim phosphorescent chamber, forebodings flitted through their minds as the speed of their ascent into the mysterious heights quickened. Now the full significance of their daring exploit dawned upon him. Mesco remained silent, kaleidoscopic memories seeping into his mind—memories of Cromegeen, of Cromag's pretentious laboratory. And certain numbing dreads that he was reluctant to admit haunted the recesses of his mind.

Sharp crackings in the walls about them did not ease his mind. What if those walls burst, and their artificial skulls could not retain the pressure of their brains in a new and low pressure environment?

Or, on the other hand, suppose they slipped away from the block, their descent would be too rapid, despite the radio-active material they could discharge to lighten their bodies, and the frozen jacket they could form about them by the emission of some of the Mesco "mixture" contained in their artificial bodies?

ALL these uneasy thoughts came to an abrupt end. The weird ascending sensation ceased, and a new sensation superceded it. A steady roll.

"We have stopped," clipped someone.

"Stopped?" came from others.

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"It seems we have reached buoyancy level," was Mesco's observation.

"Buoyancy level?" queried Marlwilo, one of Mesco's fellow explorers.

"Boundary maybe?" added Voma, another of them.

"Boundary?" several echoed. Fear spread amongst them.

"Yes," decided Voma, "and beyond that there is nothing."

"According to the three-dimensional school, yes," interposed Mesco.

He felt distinctly nervous at the prospect of being on the borders of nothing, as had been suggested by some of Mertiza's leading thinkers as existing. It had been the mystery of mysteries. Where did Mertiza end? What lay above it if it did end? If there was an end, what was beyond it?

Mesco aroused himself. Along that line lay mental distress. The continuous bobbing of the ice block brought him back to full reality. The great moment had arrived.

"Marlwilo and I," he informed, "will thaw a horizontal tunnel through to the water. You are to follow immediately behind us. The thin water we must reach will be the supreme test. If we survive it, all will be well. Should one of you, later, lose your grip on this block and plunge into the depths, do not lose heart. Discharge a portion of your body substance, then discharge solidifying liquid through the base conduits."

Mesco and Marlwilo, with the aid of their artificial appendages, steered the bobbing radio-active sphere, with its additional melting emanations, for the wall before them. It sank into it, all the Mertizans aiding to propel it. The steady journey continued for a considerable time, all fearing they knew not what.

"We have gone a long way," observed Mesco, when they stopped. "Many, many times the diameter of the pit in which this block was molded. The expansion has been enormous. It is as Suprema Cromag let us know it would be. But let us proceed."

Again, steering its burrower, the procession resumed its drive into the yielding substance. Relentlessly they advanced, with characteristic Mertizan determination. But still the solid defied penetration. Despair began to conquer them.

"We have traveled at least a thousand diameters of the pit," complained Marlwilo.

"But we must go on!" Mesco was determined.

Mechanically they pushed on, and it was only when they had at least covered three times the distance already covered, and when courage was waning to its lowest, that the globe suddenly slipped forward into nothing. Poor Marlwilo, unable to steady himself, went plunging after it.

The artificial eyes of the Mertizans were blinded with the radiations of their new environment. Such light as that which streamed upon them was unimaginably brilliant. Mesco struggled to attune his sight. In time he succeeded, by opening the coral eye-shutters to form but a hair-wide aperture.

IT was a strange world he was perceiving. A place of vastness. Above was a great curvature, spangled with myriad points of light. Below, deep down from their perch, was a vast plain of shimmering, glistening substance.

"We are in a new element," he decided, surprised by the feebleness of his clipping claw.

His companions did not hear him. Communication of that nature, through this new medium, was impossible.

Mesco was spellbound, imbibing the wonder and awfulness of that new strange world. The myriad points of light above whispered of heights beyond reason, and the scintillating surface of their world substance beneath murmured of frightful depths.

Mesco was even more deeply mystified as to the nature of the element they were in. Such attenuated substance needed a new terminology in order to describe it. Clearly it was not water.

Gradually he became aware of further wonders. The block of solidified water was elevated thousands of Mertizan lengths above the surface, and from its rugged side was seeping glistening water. Mesco accepted that fact with considerable misgiving. Their block was melting imperceptibly, but melting nevertheless. Their sojourn in this strange world would be limited.

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Then a new wonder floated into the range of his improving vision. A buttress of their block had hidden some of that mystic panorama, and the monster that now floated into the scene was made incredibly more terrible by its sudden appearance. From two huge structures upon it, belched an illuminated curtain and occasional rapid flights of glowing globules, brighter than anything Mesco had ever perceived in his own world of the Stygian depths.

A high-pitched vibration that affected his diaphragms came from it. Two of his companions could stand it no longer, and plunged forward. One of the hapless Mertizans struck against a buttress at a dizzy depth, and separated into two spheres. The other, more fortunate, struck the surface and disappeared immediately.

The great monster approached nearer. Several beams, the brightness of which was painful to behold, swept the Mertizan's ice block. The belching monster issued a peculiar continuous throbbing, and flakey boilings trailed on the surface of the strange new world substance in its wake.

At first, Mesco believed it to be some huge superaquatic organism, but the sight of several weird moving creatures along that part of it where the great belching structures disappeared, made him change his mind. Might it not be something of the nature of their coral projectiles, controlled by small organisms?

All the while, those eye-searing shafts darted thither and hither upon the Mertizans' block. Once Mesco met the full force of one, an experience never to be forgotten.

THE floating monster passed out of his vision, and the panorama of that mystic world beneath its spangled dome again was his to behold. He contemplated it long, until the appearance of another floating monster distracted him. It was similar to the other. It occurred to him that their ice block was of intense interest to these creatures of the attenuated heights.

Unable to communicate with his companions through that thin medium, he approached Voma, and tapped his claw against his companion's diaphragm.

"What do you make of it?" he clipped.

"This is a queer place, Mesco," Voma replied. "I shall be glad to go down again. Our block seems to annoy these creatures. Wonder where we popped from, I expect. I have a feeling that we are not welcome."

"The block maybe, not us," replied Mesco. "They cannot see us. This block is melting, and the process, if my physics are to be trusted and apply in this queer world, is lowering their temperature in this vicinity. Hello! There's a smaller monster leaving it. It's coming this way. Do you see the creatures in it?"

"Yes!" acknowledged Voma. "Six, aren't there?" "Don't go too near the edge, Suprema. It's a long drop, and that buttress down there decapitated poor Pesco."

Fascinated, the Mertizans watched the smaller monster skim toward them.

"Our presence here," Mesco tapped against Voma's diaphragm, "has been known for some considerable time. We were a long time burrowing through."

From their lofty perch, the intrepid Mertizans watched the incomprehensible antics of the strange organisms who now actually came onto a ledge of the block beneath them. Mesco's first impression was that he was perceiving some misshapen species of his own race that moved about on their tails. It seemed that the tail had become divided. A huge head rested upon the tubular body, and directly beneath it hung two appendages.

The heads however, resembled their own coral spheres, except that from the rear ran two tubes to humps on the creatures' bodies. Three of them carried some strange tools, with which they swung and hacked away at the material of the Meritizans' block.

The Mertizans watched the mysterious creatures hack away. Then they suddenly stopped, and one of the creatures passed a long rod to the foremost of his companions who took it and pushed it into a hole they had made in the block.

There was a bustle amongst them, and they made all possible haste to return to their waiting companion in the

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conveyance bobbing on the undulating water. It issued a throbbing tremor, distinctly felt by Mesco and his companions, and skimmed quickly away.

"That doesn't make sense," clipped Voma. "What are they doing?"

"What have they done, you mean?" corrected Mesco.

The great monster picked up the smaller one, and with heavy throbbing and fantastic emissions it moved away.

"I've a feeling something is going to happen," was Mesco's decision.

EVEN as he made that thought known there was a terrific upheaval beneath him, accompanied by terrible reverberations. The huge, bespangled dome above seemed to rock, and Mesco felt himself shooting upward with terrific velocity, through that mystic superaqueous substance.

Would he survive it? Or would his life-giving sphere be torn away from his brain and its container?

Then the plunge. What a plunge! Mesco struck that undulating surface that was alive with a million pockets of white, and went down. His nerveless body sphere felt no pain, but his sensitive brain felt as if it would burst.

But the plunge into a familiar, though greatly attenuated medium served to sober him. He recovered sufficient composure as he plunged downward to discharge some of his radio-active element. Soon he knew that his rapid descent was easing.

But it was insufficient. At that pace he would smash to smithereens on the floor of his true world. It was too risky to discharge more of the life-giving substance, so there was nothing to do except to discharge the highly concentrated freezing mixture through the streamlined shielded conduits at the base of his artificial body. This was done by a structure of muscular fibre at the base of his coral head which strained on a fibrous material that ran internally downward through the lower sphere.

The result was amazing. Mesco's descent was painfully, jerkily arrested. There came a moment of hesitation, and again he experienced the sensation of accelerating ascent.

This was not what he desired, but what could he do? The previous experience was repeated, and Mesco knew that he was once more upon the liquid floor of the superaqueous world, this time, in a smaller block. He was locked in. The material in his artificial body was less concentrated than the substance that had been in the melting sphere, and consequently could not be used as the sphere was.

Soon time lost all meaning to him. It seemed that eons passed. He ceased eventually to remain conscious of the fact that his prison was awash and bobbing. That is was huge in comparison with himself was unquestionable.

Dreary time passed, and finally he abandoned hope of ever sinking again. Cromegeen was but a beautiful memory, and his companions phantoms of a distant past.

But perhaps it had not been so long ago. Solitude adds eons to moments.

Down in the Stygian depths, Cromag, Cromegeen and the Supremas of Berguise City despaired of ever seeing the intrepid Mertizan explorers again, and plans were made for another expedition into the heights. But volunteers were not forthcoming. The long absence of the previous expedition told of unimaginable terrors.

Then came sensation. The drum ligaments tapped out the messages throughout the length and breadth of Mertiza. Mesco had returned! What he had to report flabbergasted the imaginative Mertizans.

"ABOVE us," reported Mesco, "is a vast strange world where, at intervals, shine upon it a great fire globe that is far away from it. The creatures of this world are strange. Their life does not depend upon radio-active material, but upon chemicals which they swallow and absorb into their system. From their attenuated environment they also inhale a substance necessary to their existence, as we take substances from our water.

"I was befriended by one of these creatures. The block in which I was imprisoned melted, and when I was on the point of descending, I was picked up by one of these creatures, in a surface water skimmer. He took me to a

[*Turn to page 90*]

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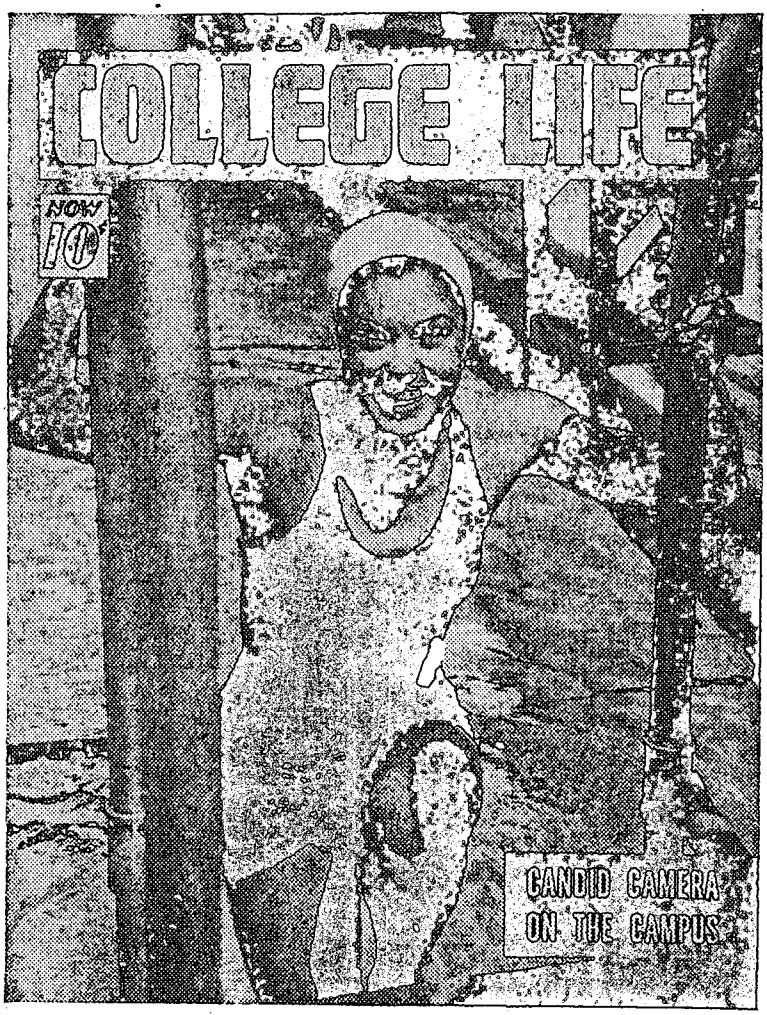

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strange place, a pile of structures upon solids, surrounded on all sides by our world substance.

"At first everything was incomprehensible. I was placed on show. Thousands of these creatures came to see me. But the one who had befriended me began to attempt communication with me. He learned that I clipped, and placing a weird membrane against my claw which was attached to something he wore over his head, he pointed to a container of water. I clipped out the name, 'water'. He made me repeat it many times. From that to solid water, which they, too, can manufacture. Then he showed me a strange thing on a white flat, with water creatures, some of them unknown to us, scrawled upon it in black lines. I clipped out, over and over again, the names of the creatures I knew.

"Soon this creature was able to clip back at me with an artificial claw. Laboriously at first, he dragged out of me other clippers of our language. Then came a time when I began to understand some of the strange clipping.

"In time, he was able to let me know all about himself, his world and his fellow creatures. The great fire globe was cooling rapidly, he informed me, and also assured me it was one of an untold number in an endless void. Our world was an offspring of that fire globe, he declared, and was the second away from it, out in the void. They had recently come from the third world which had become to cold for them to live upon. Great numbers had come to our world to prepare the way for the others of their species.

"Our thin upper reaches lacked something they needed to keep them alive. So they were obtaining it from our water. Thousands of these big laboratories had been set up all over our surface world.

"Later, when I had learned to master some of his strange terminology, he took me on a long journey across the water. We came to a large island, and he showed me the largest of their stations. First I was taken into the power room.

"From the carriage in which he wheeled me, I beheld further marvels. I was told that I was looking at huge dynamos, machines that developed energy that ran through certain metals. He termed it 'electricity.' There was a continuous humming which was quite audible to me, even through that attenuated medium.

"These power machines were driven by engines, which used vapors derived from boiling water in large containers. We left this wonderful place and my companion shipped me out to what he termed the negative field. As we skimmed over the water, he showed me great cables, which he informed we were heavily insulated. I studied them. At intervals all along their length were attached great tanks which kept the cables afloat.

"AT length we arrived at the 'fields.' My companion showed me enormous floats that made a chain stretching further than I could see. These, I was informed, supported great plates of copper sunk deep in our water. To these plates were attached the cables.

"On the surface, directly above these plates, the water foamed and frothed, like an angry endless billow. 'That, my Mertizan friend,' clipped my companion on the artificial claw, 'is hydrogen, a very light gas. Unfortunately it is of no use to us. It is dangerous, being highly inflammable. It comes up in millions of bubbles from the plates beneath, and ascends into the heights above, out of our way. At the positive field, on the other side of the island, the opposite pole, is released oxygen, a gas very necessary to us. The atmosphere of this planet is alas, uncongenial, indeed fatal to us, until we have liberated millions of cubic miles of oxygen into it.'

"'How long will that take you?' I clipped.

"'Several hundred years yet. We have already been here over a century, and set up ten thousand of these electrolysis stations over the planet.'

"'But you will dissolve millions of tons of water by then?' I objected, thinking of our species.

"He shrugged.

"'Can't be helped,' he answered. 'We must dissolve at least one fourth of the

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ocean before we dare take our respirators off: It will mean the end of your species, Mesco.'

"We were silent after that. I think my surface friend was really sorry for us. As we returned to the island he related many things about the planet from which he came, and the grandeur of their past civilizations. He looked up at the great fire ball, which shone upon us like a wicked red eye. He rubbed his hands. Always he complained of the low temperature.

"'Old Sol let us down,' his artificial claw clicked to me. 'It collapsed millions of years before it was predicted to. Our world became a frozen waste. In places the very atmosphere froze. Our species were driven to burrow under ground, but it's not satisfactory. After hundreds of millions of years we have lost the ability of biologically adapting ourselves. Evolution seems to have spent its force as far as we are concerned. Our only hope is this planet. But, ye gods, this torrid zone is already cold! To the north and south it is frozen. Perhaps soon a few thousand years—' He shrugged.

"Again we lapsed into silence. My thoughts were gloomy. To save their species we were to be destroyed, not deliberately, but incidentally."

There was a long silence after Mesco's alarming report. The legislators were numbed with dread. They shuddered in the water about them, as though that element had suddenly become a substance of terror. Moment by moment, it was slowly thinning, as the great stations of the creatures above released the composing gases.

"But we are not defeated," suddenly assured Mesco.

HIS statement was dramatic. All eyes focused on him.

"I have a scheme!"

"What is it?" demanded Clavello. "Let us know immediately. This is not an occasion for silence."

"Or clipping," interposed Mesco. "We must act at once."

"But how?" clattered many claws.

"One thing I observed, above all else amongst the invaders," informed Mesco, "was their hatred and dread of the cold. Was not my friend always complaining? Did they not destroy our block with all possible haste? Has not ice driven them from their own world?"

"Yes, yes!" agreed a legislator.

"And did he not tell me," continued Mesco, "that the temperature was but moderate, high enough for them only on a narrow zone around our great globe? That to the north and south it was cold, frozen? The fire globe above is but feeble. Suppose we could lower the temperature of this narrow zone? A delicate balance of temperature would be upset. The whole planet, as my friend named it, would become ice-bound!"

There was great clattering amongst the legislators. Finally Suprema Clavello demanded silence.

"Can you do this, Mesco?" he demanded.

"I think so. The remarkable properties of ice makes it possible. As it ascends, manufactured at the exceedingly low temperature my mixtures attain, it adds to itself, it becomes multiplied thousands of times, as our block was. It absorbs all heat within its neighborhood. Suppose"—he was growing excited—"we dig thousands of pits, larger than the one at Janlee, and liberate thousands of ice blocks?"

Legislators rushed forward in their excitement. They all clamored about Mesco. He was right! The idea was stupendous, but it would work.

"Order, order!" demanded Clavello. "Arrangements must be made immediately. We need hundreds of thousands of laborers, and Mesco's mixture must be manufactured in huge quantities."

"And I," exalted Mesco, "will ascend before the general release, to observe its effect."

Mesco remained to oversee the great task in which nearly all Mertiza participated. Then he was bidden to ascend. Mertiza laborers, supervised by scientists, were waiting to release Mesco's freezing mixture into thousands of pits, beneath the torrid zone of the planet.

Once more Mesco surveyed the upper world from the mouth of a tunnel melted through the ice block from the centre. He was not alone. A Suprema

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had come with him.

"Well, Merlo, what do you think of it?" Mesco tapped on the artificial diaphragm of the Suprema.

"What a strange world!" was the reply. "I never imagined a place like this. It's dazzling."

"You are unfortunate. The first time I beheld it the fire globe was on the other side of the planet. But look, here comes one of their vessels."

MERLO was frightened on perceiving the great monster which came drifting toward them.

"It's about time the blocks came up," he tapped hopefully.

As though in answer to his wish, a great upheaval, rocking their block, took place before them. One moment the vessel was ploughing toward them; the next it was flung high up as a mighty block of ice shot up from the deeps beneath it. It crashed back on the huge ice field, emitting a blinding flash.

The Mertizans' observation block tossed and rotated. They found themselves facing an electrolysis station. Not far from them they could preceive a foaming streak which stretched away far beyond the range of their vision.

Again there came a frightful upheaval, as from the depths came yet another giant of scintillating vengeance. There was a glint of brilliant yellow as mighty metal sheetings were flung high into the atmosphere, to fall twisted and warped back on the heaving ice below which reared itself high above the agitated surface of the water.

That was but the beginning. Mertiza unleased her fury against the relentless invaders.

Mesco and Merlo were flung from their block as another struck it from beneath, and precipitated into the angry water. Mesco liberated but a small quantity of freezing mixture, and his terrific descent was retarded.

Merlo was unfortunate. Before he had time to collect his thoughts he dropped with smashing impact onto a rising block. His battered remains were carried up to the bitter world above.

Mesco descended into the Janlee dip, and was discovered by a passing projectile.

Meritza was saved! The scientists reported the pressure of the water was now stable. The great ice battle became a memory.

Mesco was bidden to ascend again. Long they waited for his return. But at length he dropped from the heights. It was a strange report he had to make.

"The blocks have become a vast solid," he reported. "I had to thaw my way upward by the melting sphere, was compelled to proceed in a spiral, using my propelling appendages against the sloping solid of the floor. Many, many times I gave myself up for lost. At length the great solidified surface was mine to behold.

"The upper world has altered. What an alteration! I saw some of their vessels crushed between huge blocks of ice, others smashed to smithereens, their debris scattered far and wide. There are thousands of bodies frozen solid, and the electrolysis islands are frozen wildernesses.

"It is a world of grim desolation and death. Nowhere did I see a living thing. The upper atmosphere was dark and brooding. It is as I foretold—the red heat ball has lost its battle against the sudden disproportionate cold. The delicate temperature balance has been disturbed. Those poor creatures from a colder world, frail, like our lower organisms, had failed to take root."

MESCO was chastised for his sympathies, but he was a hero. His natural state was restored at Cromag's laboratory.

Only Cromegeen shared her mate's sentiments. She, too, grieved.

"Perhaps," she clipped, as they floated from Austrel to the fringe of the Stygian wastes for their love glide, "they were a noble species who knew more about life than we do."

"We know little of life," answered Mesco, "except that one of its laws is to kill, or be killed."

Read CAPTAIN FUTURE—15c At All Stands

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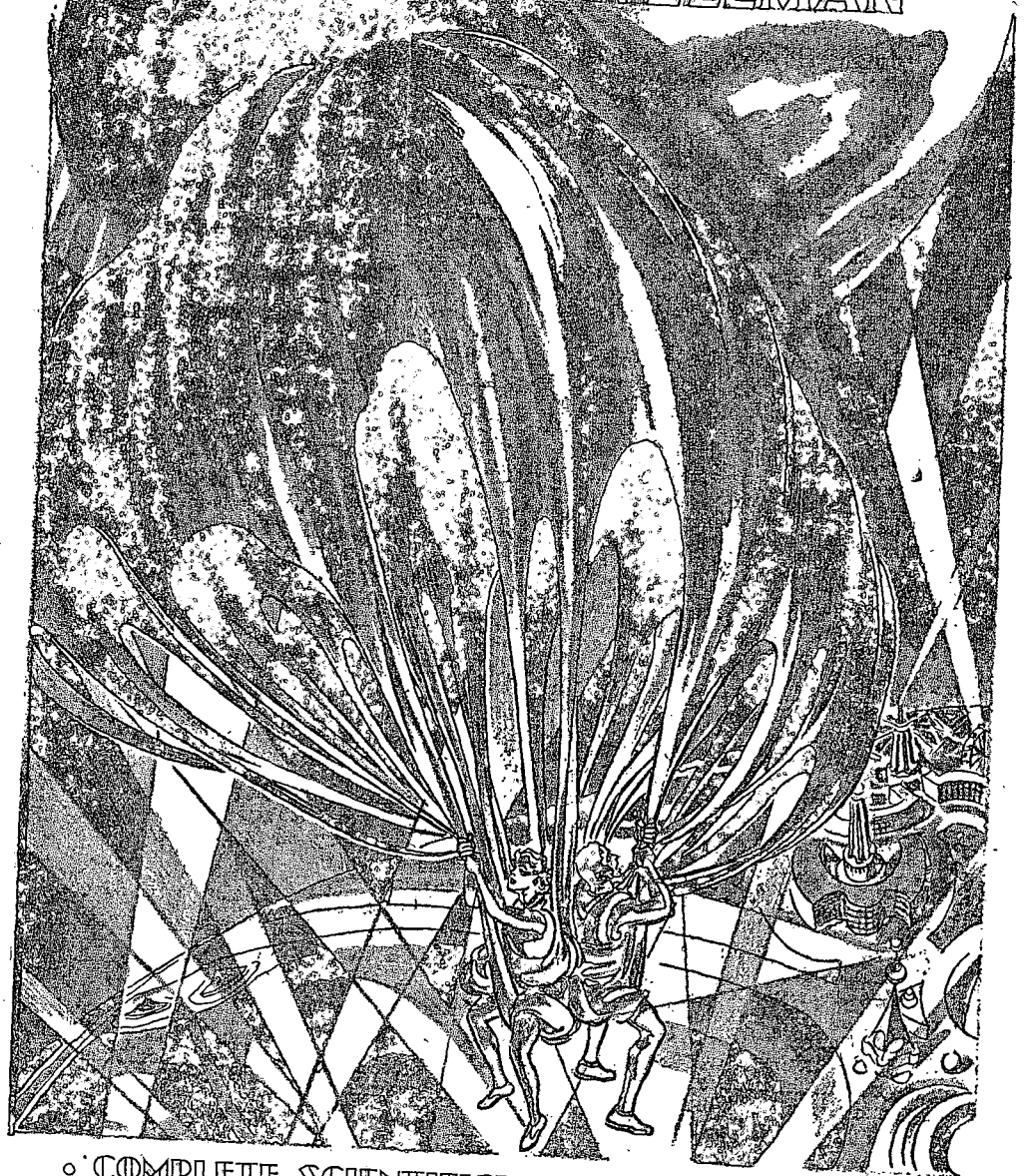
The WORLD of TOMORROW

A Complete Scientifiction Novel

By MANLY WADE WELLMAN



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Rich man, poor man, beggar man and thief all had different roads to take—but all interplanetary lanes cross at the Fair of Worlds!

PREFACE

FROM a circular, distributed throughout all inhabited worlds of the Solar System in the year 2980:

Heigh-ho—come to the Fair!

Carrying on the era of interstellar goodwill, understanding and peace—the First Pan-Stellar Exposition is open for its second year.

Every inhabited world is represented—Mars, Earth, Venus, the Jovian moons—upon the midmost moon of all. Ceres, the Queen Asteroid, has been made into a paradise! Of all her 400,000 square miles, not one inch but sprouts a delight, thrill or amazement.

Come one, come all! Welcome to Ceres and the Pan-Stellar Exposition, where all the wonders of all the worlds are marshaled for you! Come by private rocket. Come by liner. Come by special Fair caravan.

But come!

By order of
Dr. Linda Trojan,
Directress-in-chief, First Pan-Stellar Exposition,
Feb. 9, 2980 (Terrestrial reckoning)

CHAPTER I

Rich Man, Poor Man, Beggar Man, Thief

DR. LINDA TROJAN, the directress-in-chief of the First Pan-Stellar Exposition, had dismissed the last concessionaire and exhibit manager from her private office in the Administration Area on Ceres' equator. Had she cared to flick on a vision screen and dial in a remote space-view, she might have looked upon the interesting asteroid. Ceres had been arranged purely for the pleasure and instruction of visitors, with the cream of wonders from Venus, Mars, Earth, and Jupiter's lunar principalities.

But these matters had ceased to be a marvel to her. Now they were only an occupation. Her business of the morning was done, but she did not relax at her desk. She put out a long white forefinger and touched a button on the battery of signal devices.

"Yes?" came a quick, deep voice from the speaker before her.

"Come in, Nangor," she replied, and took her finger from the button.

She was tall and dark, with a pale wise face, fine features, wide knowing eyes, and red lips that did not seem made for snapping orders. Nor did the sprucely tailored suit, with official braid and insignia, disguise the trim femininity of her figure. . . . Nangor came in. He was a Venusian native, one of the few who had survived to the thirtieth century. Like an erect frog of human size, he stood and goggled at her. His scaly, snake-patterned body was clothed Terrestrial fashion, in tunic and trousers. He was Linda Trojan's secretary and confidant. She had for some time considered him her best and most trustworthy friend.

"I gather," he rumbled, in the typical hollow Venusian tone, "that this isn't Fair business." Then he laughed shortly. "A joke, do you understand? Not Fair business—unfair business!"

"So some would tell us, Nangor. Sit down. Big crowds out there?"

"Big," he replied laconically.

"All worlds?"

"All."

"Are they fraternizing? Being friendly?"

The froggy head shook. "Hardly at all. And you know why?"

Linda Trojan sighed and took a cigarette from a box.

"Yes. The Fair was opened last year for the sake of interplanetary good-will. And now there is war talk. I'm afraid they mean it this time."

"The last war's too close for comfort but

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not close enough for example," elaborated Nangor. "They're able to remember—to keep their eyes open, but not to profit by that experience. Each of the four world governments snaps at the other, accuses the other. If they were sure which ally to trust, they'd be choosing sides now. Earth and the Jovians, say, against Mars and Venus. Or Mars against the others."

"WHAT can we do here for interplanetary good-will?" asked Linda Trojan.

"There's that Venusian pageant," suggested Nangor. "History. Interesting. Might have an all-worlds program, with features about cosmic history. Good-will. Speeches. A notable person."

"Arrange it," rejoined Linda Trojan. Lighting her cigarette, she put it down at once. "Nangor, we've got to have the worlds ready to back up the Peace Meeting. In spite of all this trouble, the governments in power would all welcome peace and union through the System. We need to prove interplanetary friendship somehow."

"That's what the Fair is for," reminded Nangor, taking up her forgotten cigarette. He puffed, swallowed the smoke. Tobacco was dearly loved by all Venusians. "Pity it couldn't have been tried sooner, before the War. Then a few of my people might have lived to rule their own world, instead of Terrestrial adventurers—" He broke off short. "There, I sound like a malcontent. Forget it. I want world union, like you. Peace. All will want it, if they understand. As you say, the governments themselves are ready —"

"No," she broke in. "Not all governments. There's one, unrecognized but powerful. I mean John Braman."

"John Braman," repeated Nangor. "I know the name." Well he might, for Braman was the richest and most influential being on Venus. "Yes. As you say, his wealth is a government, a principality. He has subjects, servants, in every habitable corner. Even here at the Fair. Spies."

"And he's not on Venus at present. Don't goggle, Nangor. Nobody knows where he is, but he's left home. What if he's headed this way? What if he knows that the Peace Meeting is to be held here?"

Nangor, too, forgot the cigarette.

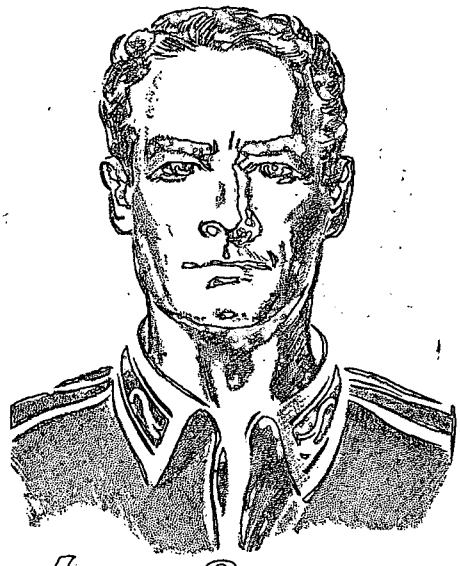
"We'd better find out. We need spies of our own. Here."

"I'm seeing to that, Nangor. The *Fairward Special* is three days out from the St. Louis Skyport now. It docks here tomorrow."

"Remodeled war rocket," elaborated Nangor in his clipped way. "Big gray torpedo hull. Good omen. Warships become pleasure ships."

"Yes," said Dr. Linda Trojan. "And aboard the *Fairward Special* is a League operative, one of the best of the Martio-Terrestrial agents. He is promised to me as a helper. A Martian, and I'm glad. When Martians are good, they are very good indeed."

"And when they are bad, they are horrid," chimed in Nangor. "The ship must be crowded. Tiers of seats in the old central



JOHN BRAMAN

weapon control chamber. Dormitories to either side. Yes. And four little private staterooms back where officers' quarters used to be. I wonder if anyone of interest is aboard."

RICH man.

At the last moment, John Braman had decided against using his own swift rocket cruiser, the mark of a prodigiously wealthy owner. It would get him more quickly and pleasantly to Ceres, but it would also attract notice. That was what he did not want. Instead, he had taken a stateroom on Spaceways' *Fairward Special,* under the name of Palmer Lieb. He might have ridden in the public compartment, but he did not want to face that much inconvenience.

Smugly he lounged alone, a huge, full-bodied man with strong, heavy features. Now that he had time to think over his life history, he found it satisfied him. A parentless Australian waif of twelve, he had emigrated to Venus in 2994. Six years of contract labor, yet he had managed to save part of his pathetic wages. Then, combining wit and ruthlessness, he had bought into mining and farming combines. He lumped those profits to start arms factories.

Then had come the war, in which Venus sought to conquer Earth and Mars combined. He had won, even when his adopted planet lost, for he had sold munitions to both sides.

Now, after thirty-six years of toil and triumph, he was the richest and most powerful man on Venus. He might become the richest and most powerful in the Universe . . . but not if the planets forgot war and their Peace League became a reality. John Braman's empire flourished only on war and rivalry.

Braman was going to the Fair, but not for pleasure or relaxation. He was going to frustrate certain pacifists who hoped to realize their dream of Interplanetary Alliance. Braman was in close touch with the

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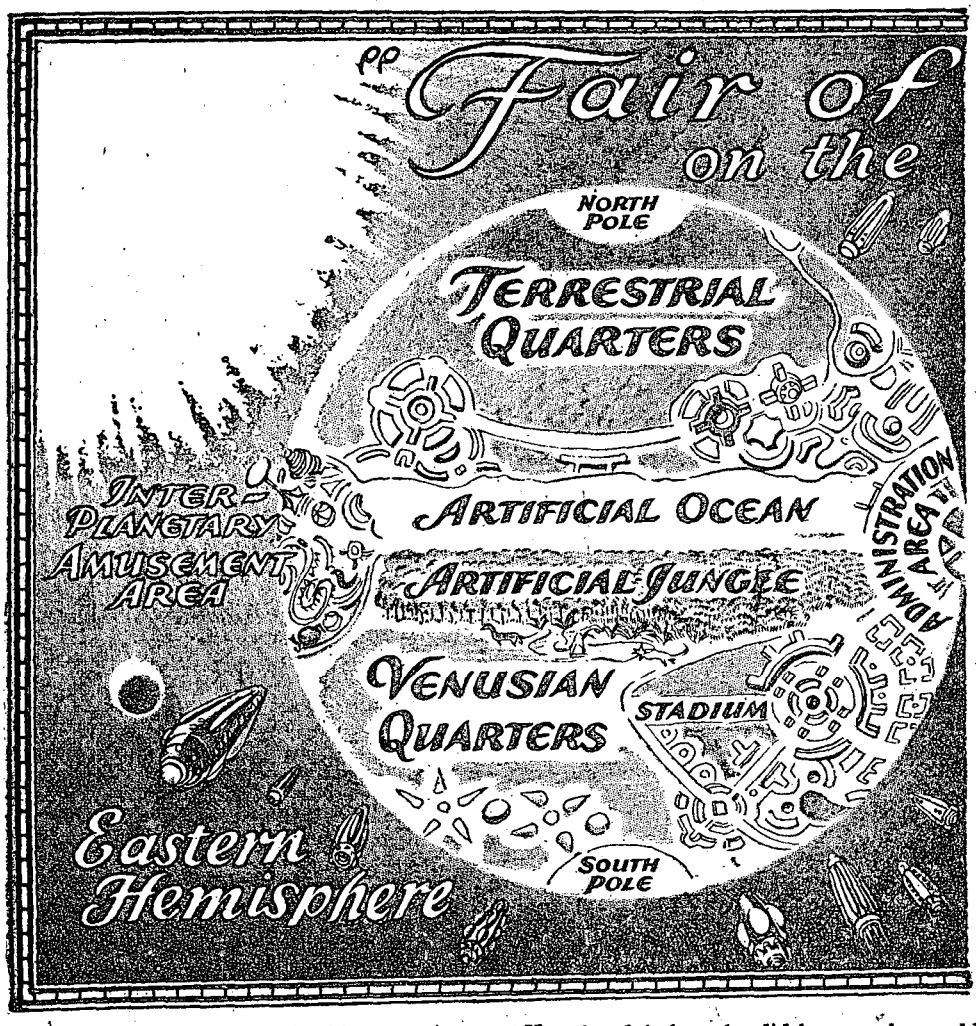
activities of this organization. It was elementary for him to plant spies in any organization that affected his business. . . .

Boredly he gazed through a view-plane at the public compartment ahead. The tiers of cushioned seats were filled with folk of all the planets. The men sat on one side, the women on the other. With a smile that was strangely thin for his heavy face, he wondered what their horror would be if they knew the despot, John Braman, was aboard. Most of them were scrubby Terrestrials, squandering their meager savings on a single shallow expedition.



One young woman caught his attention for a moment. She was handsome, blond, spruce. But John Braman had little time for women.

Across the aisle from her sat a Martian. He was not a mere polypoid mass with a sagging bladder body, six tentacle limbs, and a chrysanthemumlike head. This one had undergone the process that made some Martians fit for interplanetary adventury. By surgery and artificial support, he had been changed into a figure roughly like that of an Earthman.

The lowest pair of tentacles fitted into jointed metal tubes to serve as legs. A higher pair approximated arms. The soft body, also shaped artificially, wore a tweed tunic with closed collar, Terrestrial style. The creature appeared to have shoulders and a waist, carried erect its cranium with the fleshy petals.

With lofty amusement, John Braman studied the Martian who aped a dweller of Earth.

POOR man.

Yaxul, he was called by Earth people. On Mars his serial number was 98-7874-28011.

Yaxul rode where he did because he could not afford a special compartment. Work, not wealth, had been his goal as long as he could remember. Like his parents before him, he had been bred to the Martian Secret Service. Now he served the Intelligence Committee of the Martio-Terrestrial League. The Venusian War had won him success, not honor. His profession throve best in obscurity. He was being sent to the Fair, to the directress-in-chief, on special duty. He was as fine a detective as breeding and training could make.

He had no eyes, no ears, no organs of smell. But the fleshy tags of his face par-

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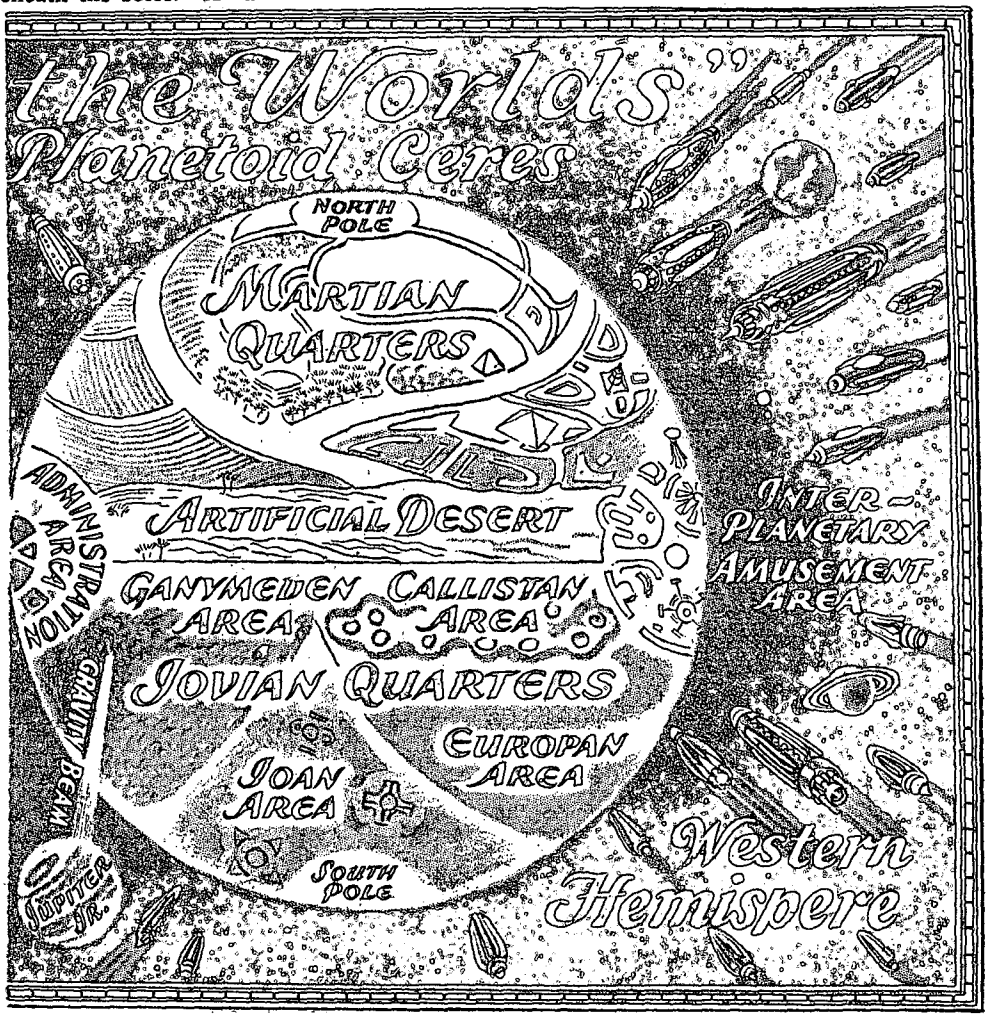
took of all those things. In some ways his awareness sense transcended their powers.

He studied the young Terrestrial female across from him. Sagely he recognized that her physical characteristics would greatly attract males of her species. He was more interested because her face seemed somehow recognizable. He had observed a photograph in a history of interplanetary crime —yes, she resembled Corsair Mell, the pirate chief who terrorized the Jovian colonies before they won power and liberty.

Yaxul became aware, too, of a vibration beneath his soles. A radio-detector device



was attached to those soles. They gave him news that the floor hid something besides the gravity mechanism.

CHAPTER II

Job for the Beggar

THE changing of the rocket to peace uses had involved the removal of bomb-guiding coils from the gravity hold, leaving an empty space perhaps seven feet, by four, by two.

Faro Gird had stowed away there two hours before takeoff time. He had stolen a package of concentrated food, some bottles of mineral water, and an oxygenator from a space-suit at the Skyport. Now he was going to the Fair.

Faro Gird was tall, tawny, rugged. He was shabby, and his strong face was too scarred and fierce to be handsome. In the final battle of the Venusian war, he had almost been killed by fragments of a roving bomb. Those fragments had scarred also his spirit.

Lying still, he thought about the War. He always thought about it a lot, more than he liked. The telecaster slogan—"Free the Universe!"—had stampeded him into enlistment. He remembered the bitter toil of training, the nerve-racking campaign, the unthinkable horror of the battles, where he had escaped death so narrowly.

He had come out of it shiftless, off balance. He had failed at every job he tried on every habitable world. Was he, like so many veterans, a permanent and incurable vagabond, miserable alive and happier dead?

He would know, he decided, when he got to the Fair. Crowded upon a pocket-sized world would be everything the planets had to offer—what passed for excitement, activ-

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ity, employment. He'd have a look, think it over, maybe find a place to fit in. He needed work to support life, to calm his troubled spirit, help him forget the days of battle. If the Fair could not show him the way, there was one other possibility. Faro Gird would arrange his own death. . . .

He put a morsel of food concentrate into his mouth. He figured that he must be lying just beneath the women's side of the passenger compartment. Were there any pretty girls above him? He would like to talk to one, perhaps find in her some quality that would comfort him. For all he knew, the very girl he needed was sitting within arm's reach of him.

THIEF.

Shiloh Mell surmised that the Martian across the aisle was something in the Government or the police. He was observing her professionally. But she was not unduly alarmed. Nobody had anything on her, though she was the granddaughter of old Corsair Mell. A criminal by descent and training, she was Fairward bound for no good.

At home on Ganymede, under the pirate laws of the Jovian Alliance, she could not be prosecuted for theft on a strange world. She would even be envied and praised. What would it be? That big lump of gamavon, the substance that restored nerve tissues, in the Venusian section? The Three Tablets, prize of the Martian exhibit of Pre-Canal Culture, that would certainly be ransomed by the government? Some or all of those Terrestrial jewels?

The confidence game might work. That husky, dark chap in the compartment to the rear, for instance, must have more money than he needed. But even as she considered it, she ruled it out. Shiloh Mell disliked that sort of adventure. She would rather know an interesting pauper than the wealthiest bore in the System. Beneath her intensely practical veneer, the granddaughter of pirates had a heart potentially warm and romantic.

"Parrdon me, misss—"

That sibilant voice must belong to the Martian. Sure enough, he was leaning toward her, forcing words out of the artificial voice-box lodged in his breathing tube.

"What is it?" she asked, rather frigidly.

"It iss my belief, misss, that therre iss a living crreaturre in the hold jusst beneath you."

THE stowaway blinked. Light was streaming into his little lair. The metal hatchway above him had been lifted.

"Come out of there!" rasped an official voice.

Somebody reached in and clutched his ragged sleeve. Out came Faro Gird, in an alert leap. He had been discovered. He was in trouble. He'd better be ready to fight or flee.

All around him the passengers had risen in alarm from their seats. Two space-hands flanked him. Beside the scouting officer, a Martian stood on his slender lower tentacles, nodding his petaled head toward a blond girl.

"You ssee, misss," the creature was saying, "I wass rright—a sstowaway. My sshoes have detectorr attachmentss that picked up a vibrration."

"What business is it of yours?" snapped Faro Gird, and faced the Martian.

A quick tap of his fist, he knew, would split the flowery cranium like a ripe gourd. But the space-hands closed in, grabbing him by the elbows. He flexed his big muscles to throw them off, then subsided. He was caught, defeated. He met the officer's scowl.

"Well?" he challenged.

"You know what happens to stowaways?" demanded the officer. "Come with me. You'll wipe engines all the way to Ceres."

"Glad to," said Gird. "Ceres is my port."

"And then you'll wipe engines all the way back to Earth—and jail."

"Hold on there!" roared someone from the rear of the compartment.

A big man, as huge as Gird, elbowed his way through the onlookers. He had come from a private stateroom, and he looked interested.

"What's the matter here?"

"Stowaway, sir," replied the officer, coldly formal. "He'll work his way home and into jail. Why? Any objections?"

John Braman fairly glowered. That a simple factotum should snub him— Then he remembered that, for the time, he was only Palmer Lieb, a private traveler. Meanwhile, someone else spoke. It was the blond girl whom he, Braman, had fleetingly admired.

"Isn't that rather stern treatment, Officer?"

"Sorry, miss," was the pleasant reply, for Shiloh Mell filled the eye of any Earthman. "Regulations."

"Can't something be done?" persisted Shiloh Mell.

"Only if he pays his fare. Got any money, fella?"

Gird shook his head, and thanked the young woman with his eyes.

"I'll pay his fare," announced the big man from the private compartment.

"You don't know me, mister," Gird protested. "I'm sure you don't owe me a thing."

"No, but I like you," Braman replied cannily. "You're about my size, for one thing. . . . Like calls to like." He chuckled quietly, as if the old proverb were a joke. "Here, Officer. Catch hold."

HE produced and paid over a big value-voucher, waved away change, and beckoned to Faro Gird.

"Come back to my stateroom. What are you others staring at? Can't one man do another a favor without people's mouths sagging open?"

Eyes dropped before the angry light in his gaze. Again he motioned to the ragged man he had rescued. They went together to the little cubicle, and their two giant bodies almost filled it.

"What's your name?" inquired John Braman.

"Faro Gird. What's yours?"

"I'm Palmer Lieb. I meant what I said.

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I bought you out of that scrape because we're about the same size."

Gird shook his tousled, tawny head.

"I'm not very bright, Mr. Lieb. Can't you elaborate?"

Braman noted, and approved, the shabby one's voice and manner.

"There's shaving tackle in that case," he said. "Scrape the stubble off your chin."

Gird hesitated, then complied. Meanwhile, Braman opened another case and laid out some of his clothes. They fitted Gird quite well. By now he looked like anything but a beggar. The shave, though, revealed more clearly the scars on his cheek, jaw and temple.

"You're a veteran, aren't you?" guessed Braman. "Venturesome, eh? Well, Gird, I'll give you employment and excitement, too, if you want it."

"And if I don't want it?" prompted Gird.

"I'll ask for a refund from that officer, and you can go home to jail, via the engine-room. They say it's mighty hot and mussy there. . . . You look like a reasonable man. I'm going to hire you as my secretary."

"All right, I'm your secretary, Mr. Lieb. What comes next?"

Braman was taking another object from his luggage. It proved to be a flask, with several drinking cups snapped to its top.

"Shall we drink to our association, Gird? This is Jovian guil brandy—choice. Now, then. We're both going to the Fair, and you're my secretary. Also, my name isn't Palmer Lieb."

Gird finished his drink quickly and got up from where he sat.

"Nothing to be afraid of," said Braman quickly. "I took a false name simply to get away from business, have a holiday where responsibility couldn't reach me. But that story will become known. I'll be bothered by messages, calls and so on. That's where you come in."

Gird resumed his seat.

"Do I?"

"Exactly. These bothersome people will be hunting for Mr. Palmer Lieb. You admit them, say that you're Lieb, and what do they want? They'll realize that you're not Lieb at all, leave us both alone. Understand?" He smiled expectantly.

GIRD nodded. "Not bad. They'll think they made a mistake."

"Wait. Here's something else. Your name is Palmer Lieb. And I'll be you. Faro Gird's the name, isn't it? Splendid."

The plan that he would never tell Gird took shape in Braman's secret mind. His journey Fairward, and its manifest reason, were probably known to the pacifist group. Their secret service was wide awake. Let them trace him as Palmer Lieb, keep a stern watch on his quarters. Faro Gird would fool them. And he, under still another identity, would spy, plan and act. This crisis couldn't be entrusted to a subordinate.

"Gird," he said. "I mean Lieb. There's just one thing I want from you. Obedience."

"Of course," said the other.

"I mean it. Let me say that I recognize you for an independent and enterprising

man. That's fine—as long as you obey me. That way, things will be easy for you as long as we're at the Fair. Softer and easier still in time to come. But if you bungle anything, or try to fool me, or disobey in the slightest degree—"

Cat-swift for all his size, Braman bounded erect and snatched Gird up out of his seat. Braman's big white hands crushed Gird's shoulders. His heavy face shoved close to Gird's.

"If you do," he said softly and tensely, "I give you my solemn word that you won't live out the day. Understand?"

Gird did not move to retreat or resist. His eyes narrowed, but that was all.

"When I take a job, I do my best to deserve it. But I'm not afraid of you."

Braman released him and smiled again.

"No. Those scars prove that you're no coward. Forget it. My clothes certainly fit you well. Shall we order a decent meal for a change?"

Eating, they felt a trifle of good-will toward each other.

YAXUL, the Martian, still made conversation with Shiloh Mell.

"That wass sstrrange," he commented. "Wasss it not?"

"It's strange to see a rich man who is also kind," replied the girl.

She might have added that it was good to see a poor man who was brave. Rags and all, Faro Gird had yet looked staunch and proud in that awkward position. He had not been slavish to the threatening officer, nor even to the benevolent wealthy man. And those fearful scars—war scars, surely—had added distinction to the strength of his face. She wished she had paid his fare instead of the man in the private cubicle. She would have liked to know Faro Gird better.

"That rrich man wass not kind," Yaxul was assuring her. "No. He had otherr rreassons forr paying. Can you think what otherr rreassons, Misss—Mell?"

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She turned and looked at him sharply.

"You know my name!"

"I guesss it," he said. "I'm obsserrvant. I rrememberr the porrtrrait of a rremarrkable man, Corrssairr Mell. You rressemble him grreatly."

"He was my grandfather, and I'm proud of it," Shiloh Mell retorted. "And I don't see what business it is of yours."

"My bussinesss iss the law," said Yaxul.

"League Police?" gasped Shiloh Mell.

When he nodded, she could not help but grow pale. She'd thought there was no possible clue to her plans. But if this Martian ferret had been told off to follow and challenge her. . . . Those thoughts were easy to read upon her face, and Yaxul exulted.

"Therre iss no causse forr alarrm," he said gently. "But we musst underrsstand each otherr, help each otherr."

"I'll not betray any friends," she said flatly.

"I do not assk that. You can help anotherr way."

"I'm listening," she stated.

CHAPTER III

The Beginning of Adventure

CERES revolved smoothly and colorfully —almost preeningly. The asteroid, five hundred miles in diameter, had been supplied with a center of artificial gravity, so she could maintain a shimmery atmosphere, water and life. Small ice-caps whitened her poles. She revolved once in a little less than twenty-four hours.

The Fair Committee had divided her into an Eastern and a Western Hemisphere. These, in turn, were cut by an equatorial line, so Ceres had four quarters. One quarter was given to each World Government for its area of exhibits.

The northern part of the Western Hemisphere was Martian. Here swarmed a packed mass of mechanical and chemical activity. Like a single great community of Mars, all its devices were turned toward winning the needs of life from nature.

There were diversities of wonderful things —relics of the unthinkably old Pre-canal Culture, great halls for public meetings, hotel blocks, museums of curiosa. But the greatest area was for what Mars most respected and needed, practical science. Almost centrally located in the Martian quarter was a glittering, garish locality where every diversion could be found. This was called Pulambar, after the great City of Pleasure at home on Mars.

Along the equator ran a strip of dry, hot sand, rusty red—an imported bit of the Martian desert. Across that sand-strip, to the south, a quarter was divided into four smaller areas, for Ganymede, Io, Europa, and Callisto.

Above this quarter, tethered like a balloon by a gravity beam, hovered a sort of satellite. A twenty-mile globe had been artificially made of banded gas without and a solid core within. It was a miniature Jupiter, and some thought it the greatest wonder of all the Fair.

The northern quarter of the Eastern Hemisphere was Earth's, divided into many smaller districts for the wealth of various national and continental exhibits. Here, as with the Martian Pulambar, there was a central area, but it was for sports. All the various contests of skill, strength, and training—there were many each day—were held here. Along the equator tossed the waves of an artificial ocean.

The southern shore, at the very equatorial line, was matted with Venusian jungle, under a localized fog. Beyond was the Venusian quarter. There were fewer exhibits here, but all interesting. The *pièce-de-resistance* was the nightly Historical Pageant.

All this glory could be glimpsed from afar by the passengers aboard the *Fairward Special* as she dropped down. A crust of architecture, white and red and prism-tinted, thrust up in spire and dome successions, falling into square and round and woven designs. Ceres was like a tremendous round cake, frosted all over and about with ornate and many-colored icing.

The Skyport was at the equator, where the east edge of the Eastern Hemisphere came to the west edge of the Western, a junction of all four quarters. There, too, was the area of Administration and Pan-Stellar Activity.

DR. LINDA TROJAN was talking to the All-Worlds Night Committee when Nangor spoke through her receiver, asking for immediate audience. A worried note in his deep voice impelled her to hasten the meeting's end, usher out the committee men, and send for her secretary.

Nangor did not enter alone. A blond girl followed him—a girl of Terrestrial blood, but of Jovian costume and manner. She was almost as tall as Linda Trojan and quite as handsome in a very different way. She seemed greatly agitated.

"Sit down, Miss Mell," Nangor boomed at her. "Tell Dr. Trojan what you have told me."

Out came Shiloh Mell's clenched fist. It opened and dropped upon Linda Trojan's desk something small, angular and shining. The directress snatched it up, studied it closely. Then she looked quickly into the blue eyes opposite.

"So you're an operative of the League?"

The blond head shook. "That's not my tag. It belongs to a Martian named Yaxul. He told me to bring it, make his report for him."

"He did?" Linda Trojan studied her visitor. "Will you sit in this other chair, Miss Mell?"

She indicated an arm-chair nearer to herself. Shiloh Mell hesitated, then shifted her seat. Her hands dropped on the arms of the chair, and the sloping back invited her to lean her head against it. That was just what the directress wanted.

The chair was crammed with delicate machinery for the measuring of its occupant's pulse and respiration—a lie detector of the first order. Nangor also sat down, where he could watch a half hidden instrument board. Its indicators and gauges would inform him at once of Shiloh Mell's reaction

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to every question.

But she was talking on without being questioned.

"He saw things on the *Fairward Special* that made him suspicious. He told me he thought I could be trusted. He has to follow and investigate one of the passengers, so he sent me in his place, to carry his messages."

"What messages?" asked Dr. Linda Trojan.

"He said this much. A rich man was traveling with us. He's named Palmer Lieb. Big and heavy-set."

"Big and heavy-set?" Linda Trojan almost cried. "That probably is—"

"Yes, yes," Nangor headed off his superior. "Go on, Miss Mell."

"And a stowaway was discovered. Palmer Lieb paid his fare, gave him clothes and food. Yaxul said this was significant. I'm not sure what he meant, but he seemed to think you would know."

LINDA TROJAN found herself wishing that she had the power of the Martian mind for judging Terrestrial character. If this strange girl—who, Nangor signaled, had so far told the truth—was trusted by Yaxul, she must be potentially useful.

"What brings you to the Fair, Miss Mell?" she asked.

"Why—a pleasure trip—"

"That is not true," interrupted Nangor quickly, his eyes on the indicators. "You have been honest up to now. Why should you lie?"

"What are you driving at?" snapped Shiloh Mell, starting.

Linda Trojan motioned her back into the chair. Eyes on the instruments, Nangor began to question her.

"You are a spy for some country? A fugitive from justice? Do you plan a crime, perhaps theft— That is it. You would like to steal treasure."

Shiloh Mell spread her hands in surrender.

"I had just that in mind, I confess frankly. But if you can read me as easily as all that, I give up the idea."

Linda Trojan was also watching the indicators. When she saw that the girl meant it, she grew magnanimous.

"Have no fear. If Yaxul took you as an ally, he knew your mettle. Even one of criminal potentiality—"

"Even one of criminal potentiality may want to do the right thing," Shiloh Mell finished for her. "Yaxul explained only a little about what he and you were trying for. Well, if a born outlaw's approval counts for anything, you're doing all right. I told him I'd help. I came here for that purpose."

"Yaxul's rather a remarkable creature, isn't he?" mused Linda Trojan. "Why is he following this Palmer Lieb?"

"Being a mind-reading Martian, he's probably found out that the man is dangerous to the cause you're fighting for," Shiloh replied confidently. "I'm only a Terrestrial descended woman, but I wouldn't trust Palmer Lieb any too far myself."

A buzzer sounded. Nangor answered it briefly, then addressed Linda Trojan.

"Yaxul has run down his quarry. He wants us to join him."

JOHN BRAMAN and his new secretary had been almost the first of the passengers to leave the *Fairward Special* and the rocket port.

The munitions magnate signaled a waiting vehicle, a cylindrical surface car, and motioned Faro Gird in. Tossing in his baggage, he finally entered also.

"Martian quarter," he told the driver. "A good hotel. Quick!"

The vehicle sped away, dived into a metal-lined tunnel, which it exactly fitted. Rockets blazed behind it, and it whizzed away like a bullet in a tremendously long rifle. Emerging in the Martian quarter, it sped along a covered highway and drew up before the great, lofty hotel.

Braman refused the help of a porter who whistled robots forward. He and Gird carried the bags into the lobby, but not to the desk. Braman's quick eye found an exit beyond. He led the way down a rear corridor, out into another glittering street, and to a second car.

"Get us to the Jovian quarter," Braman ordered the driver. "To some good hotel, quiet, with real service. Quick!"

Again the dash away, the dive into a tight tube, the burst of rocket power to waft them along.

"What's the idea?" Gird found breath to demand. "That looked like a good hotel back there."

Braman grinned harshly. "Somebody followed us," he replied. "Took the next car at the Skyport, dogged our rockets in the tube, and tried to catch up with us in the lobby."

"Who?"

Braman said that he didn't know, and didn't care. They were in the Ganymedean area as they talked. Braman registered for both of them in a pyramidal skyscraper. Soaring upward in an elevator, they reached their suite—two bedrooms, a parlor, a bath, and a balcony that overlooked the glittering exhibits. There the magnate paused only for a moment.

"Stay here," he directed Gird. "I'm going for a couple of hours. No, don't ask me where. You're too full of questions. If anyone calls, you're Palmer Lieb, a bachelor with means, on vacation. That's enough for snoopers. I'll see you before dinner."

And he was gone, with the sustained speed that was so astonishing in his huge, heavy frame.

Left alone, Gird deliberately pried through all of his new employer's luggage. He took his time, checking everything. There were stacks of modish clothing, toilet articles, books, even two electro-automatics and a pencil-sized rust ray at the bottom of one case. But there were no papers, no money. Such things were evidently carried by the strange man whose name, whatever it was, wasn't Palmer Lieb. Gird couldn't find out anything about him nor leave the suite.

ABRUPTLY he heard a buzz. He turned toward the door, saw a vision screen on the inner panel. Crossing the floor, he switched on the power.

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"Yes?" he said.

On the screen appeared a froglike face.

"I would like to call on Mr. Palmer Lieb," boomed the Venusian's voice.

"What name?" asked Gird.

The eyes of the face on the screen were searching Gird's features, apparently interested in his scars.

"Are you Palmer Lieb? I had expected—someone I knew."

"Yes, I'm Palmer Lieb. But I never saw you before."

The frog head cocked sideward as though to concentrate its thoughts.

"You are Palmer Lieb, from Venus? This is interesting. May I come in?"

"Not if you're going to be mysterious," snapped Gird, and shut off the power.

Again the buzzer sounded but he ignored it, walking back across the room. That Venusian was rude, and a fool. Or was he? Gird kept his broad back to the door, and stared at the tinted metal of the wall.

He noted that the wall surface was blank of panel, port or decoration. It was a flat greenish blue, save for one patch that seemed lightened to gray. Some defect in the coloring matter. Perhaps a picture or mirror had hung here once. But in such case wouldn't the rest of the wall be faded, and this a deeper tint?

He studied it more sharply. Suddenly the light grayness was gone, as rapidly as a drying drop of water.

Gird voiced a short, soft oath of astonishment. He walked a few steps, then faced back. Still no patch. One would think that his simple gaze had disturbed it, put it to flight. What kind of hotel was this? Memory quickly came to him.

During the War he had heard of such a thing, for use in observing and penetrating metallic defenses. An atom-shifting beam, focused at a point, would temporarily change the speed and path of atoms so that the hard became soft, the opaque transparent. The Board of Combat Science had been hoping for great things of that device, but peace had come. The device and its development went into official secrecy. In the years since then, had the atom-shift been perfected? Was it being employed against him?

AT any rate, his direct stare had undoubtedly warned away whatever caused that condition. Gird moved back to the wall, but into a corner beside the place where the gray patch had been. He watched the spot obliquely.

There, it was becoming visible again. Faintly at first, its outline sharpened, paling its color. He fancied he saw a difference in the texture of the metal. It looked soft, frail. If there was really an atom-shift at work here, the metal would be penetrable. If he moved fast, he might not be affected by the ray.

"What have I got to lose?" he asked himself. "Nothing . . . I'm a pauper, looking for adventure. Well, here goes—"

He stepped in front of the oval blotch. With all his strength, he sprang full against it.

It gave no resistance whatever. Like a clown through a paper hoop, he shot through the wall and fell flat. But then he was up again, on his feet in another room. Somebody shut off a torch-like instrument that had shed light on the area through which he had sprung.

In the darkness Gird made a quick clutch, and his fingers were full of Martian face petals.

CHAPTER IV

Plot Against Peace

JOHN BRAMAN, leaving the hotel by a side entrance, did not go far. He walked through a section of noisy, dingy amusement booths, and went into a cheap refreshment house. There he ordered a big drink of *guil*, but did not take more than a sip. His left hand reached into a side pocket, touched a flat oval device, smaller than his palm, and pressed a stud. A mechanism began to purr. It was a pocket-caller, tuned to beams of certain other devices of the same sort. Braman sat and waited.

Before many minutes had passed, someone entered and sat down opposite Braman. He was a Jovian of Terrestrial descent, ratty of face but with intelligent eyes. Then followed a Martian. Finally a Venusian appeared, a War cripple with an artificial arm and one eye covered with a patch. Braman recognized each with a little nod.

"What is it, Boss?" asked the Jovian when all were seated. "We came here as soon as the pocket-caller signal went out. We've all been busy on the orders you sent ahead. But what's it to be?"

"What I want to make it," replied Braman. "That's enough for you three, isn't it?" They nodded hasty agreement. "The report is that the Peace Meeting is going to be right here at the Fair. Correct?"

"Corrrect," purred the Martian.

"When and where? Don't you know? What are you paid for?"

"I will say this much," offered the Venusian. "There's to be a preliminary goodwill program—an All Worlds show at the Venusian historical pageant two nights from now."

He passed over a sheet of paper. It was a hurried copy of certain notes made in secret by Dr. Linda Trojan, but overheard in the making.

The level-headed governments of Mars and Earth were going to meet the peace plans at least halfway. A son of the Martian Ruler, said the notes, was to speak in terms of interplanetary brotherhood. By radio would come a cordial reply and endorsement from Solon Rawes, President of the Earth Alliance.

After that there were to be mock-spontaneous cheering and other reactions, with the hope that the occasion would be made ripe for an "announcement of importance."

Even such closely guarded plans of the Peace Party Council were easily available to John Braman, through his efficient spy system.

"I know what the announcement'll be—revelation of the Peace Meeting and its purpose," snorted Braman. 'We'll have to

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smear it." He asked the Martian: "Which son of the Ruler will talk?"

"Not rreporrted yet. Shall I find out?"

Dismissed by a nod from his master, the Martian rose and left.

"Now that he's gone," said Braman to the Venusian, "I'll give you an assignment. But don't let him or any other Martian know. You'll be in charge of the detail to kidnap the Ruler's son."

The Venusian's frog face scowled.

"Kidnap? Wouldn't it be simpler and safer to kill him? It was pointed out to me by—"

"Yes, I know who you mean," cut in Braman. "He's valuable. He does a good job where he is. But he's too fond of blood. A Martian prince is better as a hostage than a corpse who won't benefit us one way or the other. We can use him as a card to play in a tight spot."

"I can't understand it, Boss. You're willing to start a bloody war, but not to kill this prince."

"War's business, murder's crime," snapped Braman. "I've kept my hands clean after my strange fashion. Now, clear out and report to me later."

When the Venusian had departed in turn, Braman spoke to the Jovian.

"What do you think of my plan?"

"It'll work, Boss. It has to. And I think the capture will be better than the assassination. I don't like killing any better than you. My father and two elder brothers—all Earth-born—died in the last War."

"War keeps my enterprises running, and my enterprises pay you," said Braman. "I've grabbed this particular bull by the tail, and I'd better hang on. But I'm glad you think I'm right. Keep watch on our Venusian friend, and any others who want to drink Martian blood."

"I stick with you, Boss," assured the Jovian.

"Thanks," nodded Braman, unbending a trifle. "Now, then. You and those other two have been here since the Fair's start, and I've been here about two hours. You must have a good hideout, where I can organize things and dodge snoopers. Where is it?"

"Not on Ceres," was the reply. "Follow me."

They went into the open. Here the street was a silvery canyon, walled on either side by lofty buildings, criss-crossed from side to side with traffic ways, cables, and gangplanks. But the sky showed through this lattice.

Above floated and revolved a banded globe, the "Jupiter, Junior" miniature that was the pride of the Jovian quarter.

"There it is, Boss," said the henchman.

LINDA TROJAN and Shiloh Mell looked at each other with the calculating gaze of two attractive women. Nangor, assured that the strange girl would be an ally, had been sent to check the arrival and registration of a man named Palmer Lieb. Then he was to join and help Yaxul in any way necessary.

"Miss Mell," said Linda Trojan, "you've been rather dragged into this thing. But

Gird touched the controls and soared away through the roof

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you understand what it is now. We are fighting to bring peace to every world, and keep that peace. You can hardly back out now."

"I don't want you to back out, Dr. Trojan. I'll help in any way I can. But one thing—"

"Yes?"

Shiloh Mell chose her words carefully.

"This man who calls himself Palmer Lieb seems to be an enemy. But with him will be the stowaway he helped. That man, I think, is in the clear."

"You seem interested in that stowaway."

"I am," said Shiloh Mell honestly. "I saw him for that moment only. But he was a brave man, and frank, and he was having adventure. Those things I can understand and—uh—appreciate." She knew that the directress had detected the weak ending, yet she felt it did not matter.

"Good," smiled Linda Trojan. "We won't hurt him thoughtlessly."

In her mind the directress reviewed all that she had learned of Shiloh Mell. The personal qualities were splendid for secret service work. The girl was attractive, enterprising, healthy-minded. As for the criminal taste and inheritance, that was merely Jovian. Shiloh had foresworn it already, in this new and more exciting activity. On top of all this, Yaxul trusted her, and intended to use her. She, in turn, was interested in someone else who might be of help.

"What was the stowaway's name?" asked Linda Trojan.

Before Shiloh could answer, a signal came from a special communication device. Linda Trojan closed the connection by pressing a switch under her desk.

"Yes?" she said.

"Linda," replied the muffled, anxious voice of Nangor. "Are you busy?"

He was really asking if she were alone. She glanced at Shiloh, and decided that the girl must be trusted.

"Only Miss Mell is here, Nangor. What is it?"

"The man, Palmer Lieb, escaped. We're not sure where."

"Have him followed. Hunted. You have men, Nangor. Set them on the trail, without telling them too much." She waited for his boom of assent, and released the switch.

SHE had not taken her eyes from Shiloh, and the girl's reaction to the conversation had been encouraging. "Miss Mell, or hadn't I better call you Shiloh? You're at work for me now. For me, and for peace."

Shiloh nodded eagerly.

"You were going to tell me the name of that stowaway. He sounds as if he might be valuable, too."

"I'm sure he would be. His name is Faro Gird. I heard the officer enter that on the passenger list as Palmer Lieb paid the fare."

Linda Trojan wrote the name down.

"And now, will you go where Nangor is? Here's the name of the hotel. You've seen Palmer Lieb, can help track him and observe him. Obey Nangor. Good luck."

Left alone, the directress paused to sum up things in her mind. She had no idea whether the principles she held dear would win or not. But she was in the thick of the fight for them. She was the servant of peace, which all right people wanted and only wrong people opposed. Nangor would help her, and so would the Martian Yaxul, and so would this girl named Shiloh Mell.

The All Worlds Meeting would be a statement of the case. It would command the warm and active response of all normal powers and emotions throughout the inhabited System. Then the governments would know that they could safely move to an era of understanding. There would be no use for war.

A signal sounded from the reception office. An undersecretary was communicating with her.

"Dr. Trojan, there's a man here whom I can't quite figure out. He's nobody we know, and he won't tell what he wants. But he's very insistent on seeing you."

"What is his name?"

A new voice spoke, as though someone had leaned across the secretary's shoulder and answered the question himself.

"My name is Faro Gird, Dr. Trojan. You'd better see me alone, at once!"

CHAPTER V

Capture

SO, thought Gird fiercely in the darkness, this explained it. That strange Martian awareness sense could apparently strike through the walls when the atoms were shifted, study him. Now that he had hold of the creature, the agony of his twisting, pinching grip on its delicate sense organs made it blind and deaf to him. Tentacles pawed futilely at him, and a moan came from the thing's artificial voice box.

"I'll snatch you as bald as a space-helmet," snarled Gird. "Give me that ray thing—quick!"

He took one hand from the Martian's head, found the atom-shifter slackly caught in a turn of a tentacle. He wrenched it away. He flung a beam against the wall facing the corridor. He waited a moment for the softening process to be complete.

Letting go of his prisoner, he sprang forward. Once more he passed freely through the rayed area. With him went the ray mechanism itself, and behind him stayed the spy he had caught. Gird grinned. Undoubtedly the Martian had gained admittance to that dark room by use of the atom-shifter. Now, without means of escape—

But Gird was not alone in the corridor. A figure strode toward him, a stern Venusian.

"Mr. Palmer Lieb—" began the booming voice. It was the same Venusian he had seen on the vision screen a few minutes before.

Instantly Gird turned the atom-shift ray upon him. Its light completely involved the Venusian, who at once went frosty-gray, silent and misty, like a half-developed photograph.

Gird switched off the power. The Venusian, again normal in color and appearance, staggered up against a partition, gasping and quivering.

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"Kind of unstrung you," said Gird harshly. "What's all this spying on me?"

"Not spying, Mr. Lieb. Only—"

"What business do you have with me? What about that Martian in the next room? You two working together? Robbery, maybe?" Gird came closer. "I'm not the kind of man people fool with. I've got a notion to drop you down the elevator shaft."

His own words reminded him. He strode down the corridor to the doors of the elevators, touched a button.

"Don't move until I'm gone," he warned.

A door flew open. He sprang in. Almost in a breath's space, he was out in the lobby. But cannily he did not head for the open. Instead, he slid into a shadowed corner, behind a clump of tropical plants from some Venusian forest.

HE had not long to hide. Another elevator door sprang open, and out came the Venusian, then the Martian. Gird looked at the Martian. He was that snooper, Yaxul, who had betrayed him on the ship. What grudge had Yaxul against him? Then a hotel official was hurrying up to the pair.

"What luck?" demanded the official.

"He got away," grumbled the Venusian. "Did you see him? Palmer Lieb—big, scarred, tawny—"

"Palmerr Lieb iss darrk, with no scarrss," demurred Yaxul. "Quick, orr he will be out of rreach. Nangorr, rreporrt to yourr office. You," to the hotel man, "sset men to trracking him."

They bustled away together. Gird realized they weren't criminals, not even police. They were on some widespread official service. How else did they involve and command the hotel staff, and an apparent spy system as well? How else would they be able to employ an Earth Government secret like the atom-shifter? What had Palmer Lieb done? The jam was considerable.

In any case, his pursuers must be guarding all exits. He turned to the wall behind his shrubbery screen, and rayed it with the atom-shift. Quickly he stepped through. Beyond was a dining hall. Several stopped to stare at him with stupid wonder. But he walked briskly across the floor, used his ray again, and passed through another wall.

He came out into a part of the Fair. Complex as a dream of creation, various and rich as a jungle, it was unpredictable as the Universe a thousand years in the future. Gird saw gaudy building fronts, glittering vehicles, shifting lights in the shadowy corners, and the crisscross above him of cableways and gangplanks. But there was no time to wonder or admire.

"Therre he iss," came the sharp voice of Yaxul.

He realized that a trap had been laid for him. Yaxul had not forgotten for a moment the miraculous tool Gird had captured.

Half a dozen men were rushing upon him from every side. The nearest grappled him, too close to be rayed. Gird used the atom-shifter for a club.

A moment later he fairly charged through a quickly gathering crowd, reached the central traffic zone of the street. A surface car was going by, just gathering speed. He clutched at its stern. He dragged himself up and perched among the clustering rocket-tubes.

BUT he could not ride there for long. It would dive into a tube. The rocket power would start and blast him into ashes. He sprang away, sprawled at a curb, and raced into a dim doorway.

"You forgot to pay admission," someone bawled, but Gird was well past.

He flinched at what burst upon his view—the writhing necks and quivering jaws of monsters. Then memory came to save his nerves. That was an exhibit of extinct animals of Ganymede, faked and animated by clever mechanics.

Ducking among the quivering, lifelike dummies, he reached a rear door and slid through it. Behind him came the roar of pursuit. Yaxul and the others had not lost his trail.

"Hey!" someone yelled at him from the street ahead.

Gird saw that the one who yelled was beckoning frantically. The fellow wore Jovian clothes, stood at the head of an alley between two glass-fronted exhibit buildings.

"Duck down this way, quick."

Gird did so, hoping wildly that he had found a friend. They hurried along the alley, came out on a street of small recreation concessions.

The Jovian cut to a fast walk, threading between visitors to Europa's Hall of Crystal, the captive disc-thing said to have been snatched from the gaseous surface of Jupiter, the Queen of Callistan Beauty. Toward the end of the street were restaurants and other refreshment places. Among these was a little drink shop.

"In here," said Gird's rescuer.

They slipped through the clutter of tables and bottles, went through a panel at the rear. Gird followed along a gloomy corridor, into a small, metal-lined cellar, murkily lighted by old-fashioned radium flares.

"So you're Faro Gird," said the Jovian. "Work for Palmer Lieb?"

"Not any more," snapped Gird, too weary and angry to wonder how this stranger knew his name and affairs. "I resign. The job's too full of hazards."

"Nobody quits a job he gives," came a resonant reply. A Venusian stepped out of the shadows, a one-armed figure with a hard grin on his froggy face. "We're taking you to the boss. He sent us to get you."

"I don't want to go," Gird retorted.

"But you'll come," said the Jovian. He drew a pistol, poking it almost in Gird's eye.

GIRD shrugged. "There's some penalty, even here at this Fair, for shooting people."

"I'll shoot if I must. Put up your hands."

But it was Gird's feet that went up. He threw himself backward with abrupt swiftness. The pellet drilled a fiery hole in the wall opposite. Gird's shoe staggered the Jovian who held the weapon, knocking his wind out. He fell, but Gird was up again.

The one-armed Venusian sprang upon his back, cold and lithe as a snake. The single forearm slipped under his chin in a stran-

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gle-hold. Gird clamped that throttling arm. With a heave of his shoulder, he pitched the creature clear over his head. He turned and ran for the front of the building.

He was almost at the door that led into the drink shop, when he heard a hubbub of voices. A booming Venusian bellow seemed to dominate. He paused to listen.

"Spread out, comb this part of the grounds for him," the Venusian he had heard named as Nangor was ordering. "You cannot miss him. He is big, tawny, well dressed. His face has many scars. Capture him. Wound him, if necessary, but do not kill him. But bring him to me."

"Perrhapss he iss hiding in thiss little drrink sshop," suggested the maddeningly officious voice of the Martian. Yaxul already loomed in Gird's mind as an agent of nemesis.

Gird had heard enough. He turned back to the place where his two assailants had fallen. From under his coat he yanked the atom-shift.

In the cellar, the Jovian and Venusian were on their feet again, shaken but grim.

"So you've decided to be reasonable," said the Jovian harshly above the muzzle of his electro-automatic.

"Rational, if not reasonable," parried Gird.

He let him have a torrent of the atom-shift rays. The Jovian paled, then faded away like a phantom. The Venusian, shocked by Gird's weapon, shrank away.

Gird chuckled, and walked across the damp floor. Beyond was a locked door. He removed the ray from his victim, who came back into view, a tottering figure of vertigo. He directed its force against the door. A moment later he stepped through.

He found himself in a circular pit, into which foggy light trickled from above. Around the edges hummed a series of nozzlelike tubes, each protruding from a nest of coils and whirling cogs. Gravity beams, Gird decided, gazing at the tubes. He had seen such things before, used to support great weights in some of the loftiest buildings on Earth and Mars. But these seemed to point at the sky.

FARO GIRD looked upward. This battery of beams was a mooring device for the big ball of steam that made a miniature Jupiter above the Jovian quarter.

His toe nudged something in the center of the floor. He bent to look. Had fortune smiled at last? It was a rocket-belt, one of several that lay there. Strapped on and touched off, it would carry him to safety.

In his joy, he did not pause to wonder what such a device did there. He dropped his atom-shifter and quickly wriggled into the harness. The motor and tube fitted on his back like a knapsack.

The moment he completed his bucklings, the door opened and voices yammered at him. He touched his controls and soared away, through the roof.

He could not see past the surrounding field of gravity beams, and knew that he could not break through. But at the top would be the steamy ball, penetrable and remote from search. He would go through it, fly beyond and to safety. The ten miles passed and he plunged into thick yellow vapor.

He found himself scraping along something of bruising solidity. He cut his rocket blasts just in time, and clung to some brackets on the metal surface. He groped, trying to discover what this was at the heart of Jupiter, Junior.

There was a scraping, and a creak as of fastenings. A voice spoke.

"Come in here, Faro Girrd."

A Martian who knew his name! He crept toward the sound and tentacles drew him in.

"Do not be mystified—norr violent," cautioned the Martian member of Braman's crew. "My extrra-assenssorry powerrss enabled me to divine yourr purrposse in coming here beforre you arrived. I have watched you, in my mind, all the way. And I have a rray gun. I will kill you if you move. Wait, Faro Girrd, until the otherrs arrrive."

Gird only felt tired.

"What's the use?" he asked of the Universe in general. "Don't worry. I won't scrap with you. But explain where I am and why everybody in the System is kicking me around."

CHAPTER VI

The Other Faro Girl

JOHN BRAMAN had a spy within the Peace Party council. He trusted that spy's loyalty and ability, but not his judgment. The fellow was too hot-headed, too fanatical. Braman had to use misguided and abnormal persons for his tools, so he also had to keep close watch on them.

The spy had reported that Shiloh Mell had had audience with Dr. Linda Trojan. It gave Braman a new inspiration. Shiloh would mention the name of Faro Gird, give him an entering wedge if he dared use it. He could find out things for himself, influence trends personally rather than leave them in the heavy hands of his agent. It might even be fun.

He waited until Shiloh Mell was gone, in the meantime making certain arrangements for her treatment. Then he sent in the name of Gird and was not surprised when he was allowed to enter the office of the directress.

He saw a tall, handsome, intense woman, with the largest and steadiest eyes he had ever met. He knew Linda Trojan immediately for a person of intelligence, courage, enterprise—a good ally, a dangerous enemy. Why hadn't his organization tried to win her for his side? Then he remembered that she would be the sworn adherent of the peace faction. . . .

She saw a man of maturity and huge size, but not soft or coarse. His face had adroitly been altered with makeup to forestall any identification with John Braman. Nevertheless it still showed John Braman's habitual expression of power-awareness. Linda Trojan, remembering that Shiloh Mell had spoken highly of Faro Gird, decided that the girl knew a good man when she saw one.

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"Sit down, Mr. Gird," invited Linda Trojan. "Would you be surprised to know that you have already been discussed in this room, and not long ago?"

Braman did not take the chair she offered. He knew what such chairs were for. He had one in his Venusian office and had frequently tested the veracity of strangers by seating them in it.

"I have only a minute, Dr. Trojan," he said. "I came to tell you about someone else you must be discussing. Palmer Lieb."

"How do you know I'm interested in Palmer Lieb? Sit down, Mr. Gird."

Still he remained on his feet, answering her question.

"Your Martian friend, Yaxul, is investigating him."

"Who is this Martian you call Yaxul, and why do you connect him with me? And why don't you sit down?"

Braman smiled upon her, and wished that she were less attractive. He felt a sudden and deep interest in Linda Trojan, who was certainly his enemy.

"I'll tell you why, Dr. Trojan. About the chair, anyway. I know something about psycho-mechanics. I've heard of such chairs, and over yonder I see an instrument board. I don't want to be seated in a lie detector."

"You sound as if you have a guilty conscience, Mr. Gird."

"No, Dr. Trojan. But I have pride."

A buzz came from the televiso.

"Excuse me," said Linda Trojan, and flicked the switch. The face of Nangor appeared.

"We have lost track of the man we followed," he reported.

"Speak Venusian," Linda Trojan bade him in his own language. "Do you see this man in the room with me? He calls himself Faro Gird, says he can tell us about Palmer Lieb."

NANGOR'S eyes in the screen looked at Braman.

"I have heard about this man from Yaxul," he replied in Venusian. "He was engaged by Lieb as a secretary. But Yaxul is certain that he is honest, not connected with the anti-peace movement."

Linda turned off the power, and faced Braman again. He managed to look as though he had not understood.

"Sit in this other chair," she said. "It's not wired, you see. I am sorry that I mistrusted you."

He accepted the chair, and smiled, more broadly.

"What you mean," he suggested, "is that you're sorry I found out your device. But I understand the motive and the necessity."

His way of saying it made her heart warm. She was glad that Yaxul had reported Faro Gird as an honest man.

"Can I make amends?" she offered. "Suppose we have a drink together."

"I should be delighted," said Braman.

A steward brought in glasses. As they sipped, they chatted. Braman had charm, and could exert it on occasion.

"I'm convinced," he said, "that Palmer Lieb is an agent of John Braman, the anti-peace leader."

"How do you know—" she began tensely, and stopped just before she gave herself away. "How do you know that?"

"I heard him talking on the radio-phone about munitions. He said there were forces here at the Fair, planning interplanetary alliance and peace."

"He said that?" demanded Linda Trojan. "You heard him? What else?"

Judiciously, Braman told her other things which an honest man named Faro Gird might have heard and mulled over. He told her enough to make her believe he should be considered in her plans.

"You don't sound grateful to Lieb for paying your fare. It could have been rather unpleasant."

"But you don't understand! I was desperate. But I suffered through the Venusian War, Doctor."

"Would you work to bring peace, Mr. Gird?"

She felt that she had found a new and competent ally. After all, Yaxul had sent a good report of him, and he had come voluntarily to expose Palmer Lieb. Her own earnest hope to serve her ideals was coupled with the growing attraction she felt for this huge, charming man.

He left at last, with an invitation to return soon. She had given him information which she would never have told John Braman at the point of a ray gun.

SHILOH MELL found herself out in the open again. She had a definite job to do and the absolute confidence of Dr. Trojan in her ability to do it. She was to roam the Fair grounds, hear the talk of the visitors, learn whether there was good feeling between planets and a readiness for the idea of alliance.

This was Yaxul's doing, she knew. His Martian instinct for reading the character of Terrestrials had chosen her as a fit operative in a dangerous game. She was thankful to him for a judgment that men of her own race might have been too fatuous to make. They would be preoccupied by her golden hair, her white skin, her brilliant eyes. They would see her only as something to be petted, admired or tyrannized over.

But Yaxul had recommended her. Linda Trojan had accepted her, and assigned her to something that promised more excitement, if not more profit, than thievery or swindling. Already Shiloh thought of her crime ambitions as a sort of dream from some other existence. This was living for an ideal!

She strolled through the administration grounds, taking time now to view them. Only the central building was tall, yet no more than forty stories. The adjacent structures, including the wide-flung power plants and consulates, were low, spacious, and as if the architects were being tactful, of no particular planetary fashion. The lawns and thickets included Venusian vines, moss-brush from Martian valleys, the color-shifting turfs from Ganymede, the leafless geometric skeleton trees of Callisto, and

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plenty of Terrestrial greenery. Some of these were mixed beds, as though to signify neighborliness across space. One such collection rose luxuriantly near the border of the administration grounds. Dark green cedars from Earth grew beside coral flame trees from Mars, and slate-gray water bush from Venusian swamp.

Shiloh's way led along a gravelly path that skirted this thicket closely.

She saw a shifting of motion among the silent crisscross of branches. Suddenly she whipped around, not more than arm's length from the shrubs. She dropped her hand into the belt pouch at her right side. Her quick fingers closed over a circular disc of metal, the size of an old-fashioned watch. At one point of the circumference was a small projection, the size and shape of a pencil stub. It was a weapon, ladylike but deadly—an electro-automatic pistol, originally given to her grandmother by her notorious grandfather.

"You in there!" said Shiloh Mell sharply. "Why are you hiding?"

NO answer, but she divined a gathering of limbs and muscles, as though for a spring at her. Her hand came quickly into view. In its hollow lay the disc, which housed a revolving magazine of fifty charges. The short barrel projected from between her knuckles. No passer-by would have seen that her lifted fist held anything. But her thumb lay on the trigger switch at the side, and the staring muzzle covered the spot where the lurker had stirred.

"Don't," called a guarded voice—human, though its accent was not Terrestrial. She saw a pair of hands held out, open and empty, as though to signal peace. "Don't," said the voice again. "Move along a little way, lady. I'll come out and explain."

"Quickly, then," she granted crisply, and took a dozen steps past the thicket.

She lowered her hand, but did not put away the pistol it held. A lean figure came into the open without too much noise, and drew up to her side. A Jovian, by his clothes — Terrestrial descended Ganymedean, like herself.

"I didn't count on Shiloh Mell to kill an old friend," he said. His lean, sly face smiled appeasingly.

"How do you know me?" she demanded.

"How don't you know me?" he flung back, still smiling. "Haw Windler. I knew you as a kid, Shiloh. I recognized you. Thought I'd hide and surprise you."

She did not remember the name of Haw Windler, but let it go.

"Your surprise party is over," she said, and put the pistol back in her pouch. "I might have shot you."

He shrugged in acceptance of the possibility, and came unabashedly to her side.

"Here for the Fair, Shiloh? Pleasure or—business?"

"Business" was a word of insinuating double meaning among the pirate descended Jovians. She shook her head.

"I'm playing straight this flight, Haw Windler. I'm sight-seeing, and looking for a man I know, named Faro Gird—"

She broke off. She had not meant to speak of the vagabond who had so intrigued her. But the man called Haw Windler nodded carelessly.

"If Faro Gird is big and tawny, with a scar-face, I know him. Odd that you should know him, too. Want to look for him?"

Shiloh certainly wanted to.

THEY walked together to the edge of the park, and Windler hailed a sky-taxi.

"This is my treat," he announced. "Faro would want me to pay your way. He's got a good job, you know—better luck than he's had in a long time."

"He deserves it," said Shiloh.

She got into the tub-shaped cockpit of the vehicle. Its helicopter whirled, carrying them up and away as on a great floating leaf. At Windler's word, the pilot headed for the Jovian section.

"This is nice," said Shiloh as the wind rippled through her hair. She turned to smile at her companion.

He was offering cigarettes. She accepted one. Long, white and gold-lettered, it had a sweetish scent. His lean fingers snapped a radium light. She drew in a lungful of the vapor. It was strange, exciting, and quite pleasant.

"This isn't tobacco," she said at once.

"No," agreed Windler. "A Venusian substitute. Like it? And tell me, doesn't your head swim?"

Shiloh realized that her head swam, all right, and that her strength was ebbing from her. The face of Windler seemed to distort into a mask or cartoon. The sky went purple and full of glaring light. She tried to speak, but could not. "Drugged," her brain told her. "Tricked, after Linda Trojan trusted me. . . ."

Then there was no thought or feeling for a space.

When she could see again, she was sitting limply in a metal chair, and looking up into the anxious, scarred face of Faro Gird.

CHAPTER VII

Attempt at Escape

JOHN BRAMAN, riding in a ground car toward the Jovian drink shop with the hidden cellar, felt disposed to congratulate himself. He had done what he came here for. He had done what he would never have trusted most of his rather limited and shaky henchmen to attempt. He had wormed himself into the good graces of Linda Trojan.

He told himself triumphantly that he was here, playing in person the part of an active spy. But there was more to it than that, if he only knew it. John Braman was having fun. Conflict and bustle were life to him. He could never have felt true triumph if all this had been achieved while he sat listlessly in a luxurious office far away on Venus.

He reached his destination. Entering the cellar, he strapped himself into a rocket belt. He soared up the disguised entrance to the steamy facsimile of Jupiter. The gravity beam that tethered the vaporous ball and held it in shape was totally invisible. Yet it was not transparent. The modification of air molecule vibrations which it achieved

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made the passage of light also a modification.

Braman's body rose swiftly in the undisturbed center of the ray. It was in reality a series of rays, ranged in a ring like the slats of a tremendously long barrel.

The yellow fog swallowed him after some seconds of ascent, and blinded him. But the rocket force was direct of aim, and brought him up against a metal bulkhead. He struck it with his fist, three times. He paused, then struck it twice more.

At once there was a clang of fastenings. A hatch opened. He entered the spherical chamber of iron that was the secret and habitable center of Jupiter, Junior. Braman had taken pains to engineer the making of the metal core by certain agents of his. Even Linda Trojan considered that round central ball merely a necessary nucleus to focus the gravity rays and hold the vapor in place. The hollow inside was some forty feet in diameter, arranged and fitted up as two chambers.

Two of Braman's most trusted lieutenants were there to greet him, the maimed Venusian and the Ganymedean Haw Windler. They saluted him as he entered, and gave their reports. Things were moving fast. Xurrn the Martian wasn't back yet. He probably was making haste slowly in his investigation of the plans for the Peace Speech. A prince of Mars would do it, one named Rrazanx. But the other big news was that they had two prisoners, Faro Gird and Shiloh Mell. Both had been taken and held for Braman to question.

"Bring them out," commanded Braman, unstrapping his rocket belt.

WINDLER opened the panel to the other half of the chamber. The two captives emerged, quiet but glowering. Braman smiled.

"I thought you were hired as my secretary, Gird."

"He was going to resign," volunteered the Venusian. "We dissuaded him temporarily. The girl is a spy for Dr. Trojan. We got the tipoff from her office. You know how I mean."

Braman nodded, and both Gird and Shiloh wondered about the source of information mentioned.

"Spy, eh?" said Braman, studying Shiloh. "Interesting occupation. As a matter of fact, I'm a spy, too. Just appointed. Dr. Trojan likes me, and—" He almost said that he liked Dr. Trojan, but stopped in time. This was no occasion to think about being gallant, especially toward a woman who was on the enemy side.

"So you're John Braman," Gird growled. "Well, I came along here at point of a gun. But I say again, gun and all, that I resign." He stepped forward, hands clenched at his sides. "Braman, you and your money and munition works add up to—well, with me it's plain sickness of the stomach."

Windler gasped and drew a gun.

"I'll make you sicker yet," he blustered, but Gird only curled his lip at him.

"Go on and pop me with that thing," he challenged. "I was through the war. I've been living on borrowed time ever since the last battle, and not any too happily. Shoot, I tell you! You look like the type that kills in cold blood. Would it make things any easier if I turned my back?"

He did so. Windler's teeth gleamed in his lean face, and he leveled his weapon. But a snap of Braman's fingers made him lower it.

"Save it, Haw. Gird, you talk like a brave man. I need brave men."

"Cowards always need brave men," retorted Gird. "Well, you don't get me. I told you to go on and shoot."

As he spoke he was looking, not at Braman, but at Shiloh. She met his gaze. Something in their faces as they regarded each other gave Braman one of his cunning inspirations.

"As I say, Gird, you're brave. And Miss Shiloh Mell is very attractive, isn't she? You admire her, don't you?" Braman's voice grew insinuating. "What if I told Windler here to do a little plastic surgery on that pretty face. Windler's quite clever on occasions—"

"Windler!" roared Gird. "If you make a motion toward that girl, you'll have to kill me the same instant. I might even dodge in and get hold of you. So hands off her!"

Braman chuckled. "Put them back in the rear compartment. I'll be gone a couple of hours. They can think things over."

WHEN a member of the reigning house of Mars travels, on his own planet or on others, it is a ringing and glittering affair. Ninety rockets, small and great, carried the retinue and traveling baggage of Rrazanx. The seventh of the Martian's Ruler's nine sons was said by many to be the most public-mannered of all the planetary royalty.

The ships landed at the rocket field of the Martian Quarter. But the retinue—officials, chamberlains, attaches, clerks, specialists—sought lodging in all parts of the planetoid, for the sake of interplanetary good-will. Eloquently but gutturally, they voiced friendship to all living peoples of all habitable worlds. They even drank at the various receptions, though alcohol is not good for the Martian system. *Guil* they drank with Jovians, *samas* and *vana* with Venusians, whiskey and beer with Terrestrials.

The buildings, ways and crowds buzzed with talk of the visit, and the forthcoming public appearance of the prince.

So elaborate was the arrival of this retinue, people actually forgot that Prince Rrazanx seemed to be shy and secret. He appeared to go to certain rich and spacious quarters in a palace of the Martian district. In reality he slipped away.

Concealed in a modest closed flying taxi, he dropped upon the roof of the Administration Building. Thence he descended to a small but snug apartment of two rooms, where no one but Yaxul awaited him.

The prince, like Yaxul, cultivated the erect posture of Terrestrials and Venusians, but only temporarily. His subjects would not respect a noble who changed his native form. And so he used no sub-induced skeleton of

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metal. Instead he fitted his tentacles and body into a jointed shell of light, gleaming metal.

A collar supported his petal skull, which was large and lofty even for the brilliant family to which he belonged. Over all this he worse a loose robe of silk-metal, red and gray-green, with pockets and openings for his upper tentacles.

Their communication was by telepathy, which only Martian minds have perfected.

"I have heard of, and approved, your many fine qualities and successes, Yaxul."

YAXUL made a little obeisance by ducking his head.

"Fame is not to be sought in my profession. But what can be hidden from the wise and powerful Rrazanx?"

"Very little, I trust. For one thing, the rumor you mention of possible violence against me has already come to my notice. It is proper that I appear at the gathering and make the address. Peace and alliance of all world governments are the strongest of my father's hopes. But, as you point out, it might be inexpedient for me to be injured or even assaulted."

"That is my attitude of thought," agreed Yaxul. "Another thing. The prince may be at a loss without his servants to wait upon him. Is there any way in which I, though unadroit, may serve the prince?"

Rrazanx did not laugh, for laughter is beyond Martians. But he touched Yaxul's tentacle with his. His thought waves were gentle, kindly bombardments of Yaxul's consciousness.

"I can wait upon myself, my Martian brother. So we were all taught to do by father's command. All I need is instruction and assurance of what I am to do for the sake of this peace activity.

As though in response to his announced wish, there came a buzzing summons at the door. When Yaxul pressed a button, a vision screen showed the image of Dr. Linda Trojan waiting outside.

Yaxul quickly let her in. She made a bow before Rrazanx, but the Martian prince offered her instead a tentacle tip, to shake Terrestrial fashion. She entered the conversation, which now became vocal.

"Your highness, has Yaxul told you that there may be danger in this appearance of yours?"

"Dangerr iss parrt of life forr everry rrulerr. I came here in rreadinesss forr it. Tell me how I may sserrve the causse of worrld alliance."

When night fell over the Venusian quarter, she explained, the huge jungle-surrounded stadium would be filled with thousands of spectators from all planets. The regular Historical Pageant this time would build into the peace plea. The shaggy royal cranium nodded.

"I underrsstand. I am to appearr on the centrral platforrm—in full view of them all? Unussual, in thesse dayss of televission, photossynthetic drama and sso on. Thuss all the more effective." He gestured largely with four of his tentacles. "I am quite rready."

Linda Trojan thanked him. There was a loud, persistent buzzing at the televiso screen.

YAXUL picked on the machine. The image of Nangor's froggy face popped into view.

"Linda?" said Nangor's voice. She came toward the screen. "Faro Gird's with me at the office, wanting to know what he'll do tonight."

"Faro Girrd?" repeated Yaxul. "The man I ssaw on the linerr that brrought me here? The sstowaway?" Then he spoke to Linda Trojan. "I judged him worrthy, even at firrst ssight. Yess, and capable. He might serve as one of ourr guarrds tonight."

Linda Trojan nodded. People she could trust were so few, and trusted ones would be needed. Nangor, Yaxul, and now the man to whom she was attracted. Surely, if Yaxul's Martian instincts approved of him, he would be a good guard. She wished in her heart that all the business were over, and success assured. Then she could relax and talk to that big, personable man. In all her labors for science and society she had forgotten that. As a woman, she needed relaxation and stimulating companionship.

"Is Gird there?" she asked. "Put him on."

Nangor dipped out of view for a moment, as if looking behind him.

"He has stepped out, but he'll be back. Are you coming this way? He'll surely return by the time you arrive."

"I'll join you there," she promised, with restrained eagerness. Faro Gird in person would be more interesting than Faro Gird on a televisor screen. She took formal and courteous leave of Rrazanx.

Left alone, the prince and Yaxul conferred once more by thought transference.

"You trust this Terrestrial female, Yaxul?"

"I find her worthy, and most intelligent. But she is not intelligent enough in all ways. For instance, even before I had approved this man Gird, she was overwhelmingly in his favor. How could she know his mind, as I do? It argues a degree of attraction between them that—"

"Have you thought of any way to prevent a possible unpleasant emergency?"

"I am thinking of such a way now," Yaxul assured his prince.

IMPRISONED again, Shiloh and Gird gazed at each other.

"You're all right," said Shiloh gravely, as though she had been weighing him and his qualities in her mind. "Brother Braman is wise. He made a mistake though, by not calling your bluff and killing you. I think you'll find a way out of this."

"I had an atom-shifter, but they took it away from me," Gird replied. "If I had that, I'd open up this iron egg they've got us in . . . You're not exactly a broken reed yourself, Sister Shiloh."

"Thanks." She walked across the floor. "Let's have another look around this hutch."

Their prison was in the shape of a split hemisphere, so that they seemed to be inside a hollow slice of fruit. A perpendicular

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bulkhead shut them off from the chamber where Braman and his lieutenants now held a council. A plane horizontal floor gave them a level underfoot. The rest of the confining surface was the inside of the curved sphere segment. This was lined with closely woven cloth, stout silk-metal of a bright blue. Shiloh felt the fabric.

"I'd like to have a dress made out of that," she announced.

"It would go mighty well with your hair and eyes. Is the outside hull pretty thick?" Shiloh tapped it.

"Seems so. Probably two layers of plating, set too tightly to let even air pass through."

"Let's see." Gird tugged at the silk-metal lining. It gave but did not tear, even when he exerted all his great strength. "We'll have to cut it." He searched his pockets. His captors had taken even his pocket-knife. "Have you any cutting instrument?" he asked Shiloh.

She rummaged in her belt bag, from which her little electro-automatic had been taken.

"Only this," she said, and held out a little cylinder of black metal. It was a radium-action lighter for cigarettes. "You could burn a piece of cloth away."

Gird took the lighter, but shook his head. "I've got a hunch. This can make a coal of intense heat—like a forge in miniature—Say, maybe we can make a knife!"

Shiloh watched as Gird made a tour of the chamber. He shrugged in disappointment.

"If there was only a little scrap of metal—"

"Will this do?" asked the girl, and drew something else from her bag. It was a trio of luggage keys on a ring. Gird almost snatched them.

"Will it?" he cried. "Just watch!"

He knelt and placed the largest key on the hard composition flooring. Then he switched on the lighter, and held it directly against the little tag of iron. The key grew red, then livid white, finally waxy soft as the heat melted it. He laid another key in position, heated it in turn. The two keys fused into a single longer bit of metal. Gird put down the last key, combined it with the others. They made one long, lean piece. He rose, switching off the lighter.

"Let it cool," he said. "I'll use the last of the heat to give it an edge and point. It'll rip cloth, pry out rivets, clear caulking from between plates—"

"You're all right!" breathed Shiloh, more warmly than before. "I say it again. I think you'll find a way out of this."

"I think I will, too," was his hearty rejoinder.

CHAPTER VIII

John Braman's Promise

LINDA TROJAN met Nangor and Yaxul alone in her office. The new ally she thought was Faro Gird she had posted to guard the door of Rrazanx' quarters. Neither she nor the others knew that the prince had slipped away, wearing modest drab tunic and trousers over his armor, to view the Fair incognito.

"Where is Shiloh Mell?" asked the directress.

Nangor spread his flapper hands.

"Dropped out of sight, Linda. I think we did wrong to trust her. She may be an agent of the other side."

"Not sshe," objected Yaxul at once. "I sstake my rreputation on herr good qualitiess. Perrhapss sshe hass been capturred."

"Nonsense!" boomed the Venusian. "Who would capture her? She was sent out on a survey that was important but not suspect. Unless one of us was a traitor, how could the opposition suspect and grab her?"

"Go and look for her," Linda Trojan bade Nangor.

HE departed. Left alone with Yaxul, the directress sighed.

"I was counting on valuable help from Shiloh," she said. "But even if she fails us, this other one you recommended—Faro Gird—is a real jewel. I wish we had more like him."

"I wissh we had morre like me," rejoined Yaxul candidly.

A signal buzzed from the televiso. Linda Trojan flicked it on. She saw a Martian head.

"Thiss iss Rrazanx," slurred a voice. "Admit me quickly. I have newss of grreat imporrtance."

Linda Trojan quickly went to the door and flung it open. Rrazanx entered, beckoning with his tentacles to two Terrestrials behind him.

"Why, it's Shiloh!" cried Linda Trojan.

"Faro Girrd!" added Yaxul.

"A mosst unussual pairr," commented Rrazanx. "Let them tell you of theirr adventures."

Linda Trojan's hand was stretched out to welcome Shiloh. She turned suddenly and stared at the big, scar-faced fellow who had come in.

"I never saw this man before in my life," she stated. "He isn't Faro Gird."

"Oh, but he is!" protested Shiloh.

"He mosst certainly iss," seconded Yaxul.

"I am ssure of him," declared the prince. I wass rroaming thrrough the sstrreetss of the Fairr, when these two came falling out of the ssky. Literrally that. They had a grreat baggy sheet of ssilk-metal—"

"Our parachute," interrupted Shiloh, without the respect due to royalty. "Gird—Faro here—made a knife. He cut the fabric lining of the place we were imprisoned in. Then he scraped away the solder and pulled out the rivets until he unshipped some plates. That gave us a place to jump out of. He even made the parachute out of the silk-metal."

"Starrt at the beginning," bade Yaxul.

Alternating quickly the following speech, they told of their captures. They described the hidden metal lair in the center of Jupiter, Junior. They told how, with a knife improvised on the spot, they had dug their way out.

"When we got the outer plate loose, we looked out into yellow fog, of course," said

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Gird. "It looked practically solid. But we knew that if we stepped out, there was nothing between us and the Fair grounds. So with Shiloh Mell's valuable help, I made a parachute—one big sheet of silk-metal, with strips torn away to make the riggings all around."

"I only worked under his orders," added Shiloh. "I was wondering all the while if the thing would ever be adequate."

"I tried not to wonder the same thing," confessed Gird. "I knew our chance was no more than one in a dozen. But we lashed ourselves together, gathered the fabric in our arms, and jumped."

Yaxul shook his petal head.

"I am utterly without prroperr comment to make."

"We whirled over and over, all wrapped up in ourselves and that home-made 'chute," went on Gird. "I figured we were fouled, and would never get the thing shaken out so that it would open. My first thought was that ten miles was a long way to fall. My second was that the time would pass mighty quickly. Then, by chance alone, a stiff little wind zipped by, and we opened out. And down we came!

"It was hard to breathe for awhile. Our noses bled a trifle. But within less than a minute, we were down in the denser band of lower atmosphere. We even talked about the view below us. There ought to be more parachute jumping, from high up, for the sake of the thrill and panorama."

"And so down you came, with a thump," wound up Linda Trojan for them. "Where was Prince Rrazanx all this time?"

"I wass almosst exactly underr them," contributed the prince. "That wass not sso much a matterr of luck as it sseems. I wass wanderring thrrough the Jovian quarrterr, like any ssight-sseerr, diverrting mysself with exhibitss and enterrtainmentss. Out of the night rrose trremendouss commotion."

"We were falling out of the sky, at the rate of ten feet a second," explained Shiloh. "A searchlight had picked us out, and everybody was watching and jabbering. His Highness could hardly have missed the excitement. But it was plain good luck that he came over to see."

"Forrtune, and the Marrtian gift of mindrreading," elaborated Rrazanx. "I divined that there was important bussinesss in that desscending parrachute. I hurrried overr, in time to find a pairr of perrssonable Terrrestrials floating frrom outerr sspace into the midsst of a crrowded ssquare."

HE told it as if he enjoyed the memory. Linda Trojan remarked that it was a wonder nobody was injured.

"But three people were hurt, slightly," Shiloh told her. "Then the police came, and we refused to explain unless we were brought here to your office. Prince Rrazanx fixed it all."

"I wass on the frringe of the crrowd, and rread ssomething of theirr thoughtss," put in the prince again. "I knew enough then to ssummon Marrtian officialss frrom a nearrby sstation. They identified me to your officerss, and I ssecured cusstody of these two. Sso I brrought them here at a gallop."

"But if this is Faro Gird," said Linda Trojan, "the big, dark man I know by that name is—"

"John Braman, spying on you," Gird informed her.

Linda Trojan grew pale, and bowed her head. Yaxul and Rrazanx could read her bitterly rueful thoughts. Shiloh and Gird half-guessed them. But nobody made a comment.

"He almost succeeded," she said at last. "He avoided my lie-detector chair, and talked his way into my—my confidence. Yaxul seemed to approve him. But he was speaking of the real Gird, whom he had seen earlier. Braman avoided Yaxul. And now—I placed him to guard the quarters of Prince Rrazanx."

"Prrobably he waitss there to ambush me," purred Rrazanx.

Gird struck his big hands together.

"Give us weapons, Dr. Trojan," he said. "This is our big chance to get him."

Rrazanx stayed in Linda Trojan's office, though he really yearned to join the party. The others went to the place where Braman would be watching.

Cautiously they approached the door. Nobody was there. The lock had cunningly been forced with a fuse ray. The four looked at each other. Braman would be inside, waiting to ambush his victim.

Weapons ready, they gathered in a bunch. With a push of his foot, Gird thrust open the door.

Inside were four persons to match their own quartet—a maimed Venusian, a Martian, Haw Windler from Jupiter's moons, and John Braman. The munitions magnate was the first to turn and stare at the newcomers.

"That's Braman!" roared Gird. "Tackle him!"

HE cut loose with the electro-automatic. Braman had no time to move. But his one-armed Venusian hurled himself in front of his employer. The pellet slapped into the froggy chest, made a coal of red light there for a moment. Then the Venusian was down.

Braman saw him fall. Aghast, for once touched by such a sacrifice, he dropped to his knees beside the dead one. He didn't even know that he had avoided a whole burst of spitting discharges from Gird's gun.

Windler and the Martian, Xurrn, charged at the interrupters. Gird shouted for the two women to hold their fire. With a quick jump and clutch, he got hold of Windler. Yaxul met the Martian, and it was an amazing sight to see them battling in deadly earnest without appeal to weapons.

Yaxul had two less tentacles than his adversary. But the four that remained to him pulsed with exceptional strength and cunning. The other grappled him, squidlike, in all six of his jointless arms. Yaxul used his own upper appendages only to fight the coils free from his neck. He stood pedestaled upon his metal-strengthened lower

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limbs, until he felt the full weight of the attacker draped upon him. Then he fell forward, suddenly and heavily, his enemy underneath.

There was a wheezing gurgle as the wind was driven from the soft body of Braman's Martian. To those who watched, it was hard to see what Yaxul had done. But Yaxul himself knew the result of his strategy.

One lower tentacle, cased in a hollow metal shin-greave and thigh-piece, had doubled upward in falling. At the point where the knee would be in a human limb was a cunningly fitted joint-housing. That metal knob, hard and compact, had thudded into the point on the enemy's body where the breathing bladder should be. It was like a blow to the solar plexus of an Earthman.

The creature beneath subsided. From its breathing orifice something popped out and tinkled on the hard floor. It was the artificial larynx. All six gripping tentacles relaxed and dropped from Yaxul.

But Yaxul drove the lashlike tip of one upper tentacle at the breathing hole, now unimpeded by the metal voice box. Like a snake, the tentacle forced its way down and in. It found a yielding, tense surface, made itself rigid, jabbed like a needle. Then Yaxul let go holds and rose quickly. His opponent settled slackly, blubbering out a colorless blood fluid. Yaxul had broken the membrane that encloses a Martian's vital organs.

"It takes one Marrtian to deal with anotherr," Qaxul slurred out sententiously.

Faro Gird had clubbed Windler into submission with his gun. Braman still lingered on one knee above the dead Venusian. Both women covered him with their own weapons, and he appeared subdued but not frightened.

"Why don't you kill me?" he asked quietly.

"Get up," Linda Trojan bade him in a restrained voice. "We know who you are, John Braman."

"Why don't you kill me, then?" he repeated. "I know this is a war to the finish. If I've lost, I'm not afraid of what happens to losers. Go on and shoot. Or shall I jump at you and make you shoot me?"

Gird pushed both his prisoner and his gun into the tentacle tips of Yaxul. He confronted Braman.

"None of that," he warned, "or I'll beat your ears off. That'll be a lot less dignified for you than dying." He held out a hand toward the women. "Give me a pair of irons."

Dr. Linda Trojan produced manacles. She gave them to him with a white hand that shook like a tussock of grass. Braman saw it and grinned uneasily. But he submitted to having his wrists confined.

"What now, Doctor?" asked Gird.

"What now?" mocked Braman.

Linda Trojan crossed to a blank wall, and fumbled with something like a light switch. Noiselessly a panel slid back, exposing a a small, dim room, little more than a closet.

"Put him in here until later," she ordered.

CHAPTER IX

Supreme Sacrifice

AT the word, Braman made a convulsive leap to escape. With his shackled wrists he clouted Gird over the head. The stricken man went down on one knee, dropping his weapon.

But he seized Braman around the waist. He held the other huge man like a vise although Braman struck again and again upon Grid's tawny head. It was Shiloh Mell who darted to the rescue.

From under her tunic she drew a dagger with a blade that telescoped into the hilt. She bared the deadly blade by pressing a stud. Her hand shot out like a snake's head. The point sank into Braman's back under the right shoulder.

He gasped and choked. He staggered backward, almost overturning Shiloh as she cleared her blade. A moment later he sprawled full length on the floor.

"Thanks, Shiloh," panted Gird, rising and holding his bruised pate. "I guess that means we win."

Linda Trojan knelt swiftly, supporting Braman's head. There was no indication of triumph upon her pale face. Braman looked up at her.

"Gird is wrong," he said, in a voice that gurgled through a mouthful of blood. "You lose. Even more than if I'd have lived. Because—"

He broke off, and a rim of pink bubbles brightened his pale lips. Linda Trojan wiped them away.

"Because?" she prompted him gently.

"I intended to kidnap Rrazanx—throw the blame on—some Terrestrial malcontents—He'd have been a hostage—and Mars would have armed—to rescue him. But I—I wouldn't have killed him—believe that. I can—think in terms of warfare—not of individual murder and assassination— Call it soft if you like, but—"

Yaxul, too, was crouching beside the wounded man.

"Go on, Brraman," he slurred. "Tell uss what you arre drriving at."

"Not all my men think—like me. One of the chief—lieutenants wanted to kill Rrazanx— Said it would be starker, surer—a cause of certain war between worlds—I forbade him, but if I die—"

"Who is this man?" demanded Faro Gird.

BRAMAN suddenly closed his eyes, and more pinkish foam rimmed his gray, parted lips. Linda Trojan shook him, as though to rouse him from sleep.

"Can't you read his mind, Yaxul?" she urged desperately.

"Only a little," replied the Martian. "He iss trrying to warrn uss."

Braman regained momentary consciousness. He tried to sit up.

"I guess I lose," he managed brokenly. "Well, maybe better this—way than in jail—Not disappointed in me—too much—Linda?"

And he swooned away completely.

Yaxul had handcuffed Windler. Now he hurried for a doctor. The other three gazed

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at each other helplessly.

"This matter will have to be met squarely," announced Linda Trojan. "I believe Braman. He did his best to warn us of something that he didn't approve of. Now what do we do?"

"We four can trust each other."

"And Nangor," added Linda. "That makes five in all. We're going to be the only ones who will go near Prince Rrazanx from this moment forward. Nobody else will come within touch or shot of him."

Windler cleared his throat nastily.

"I'm a prisoner," he snorted. "I don't know who this guy is the boss mentions. We never knew the one he planted among you. But let me tell you something. If the boss had it figured this far along, it'll go through. And, as he says, it would have been better to let him get away and only capture that prince than have him killed. Because then you'll never keep war from happening. You won't have a chance."

Yaxul hurried back with a doctor.

THE Venusian Pageant Amphitheater was enormously wide and dug incredibly deep in the surface of Ceres. De-atomizing torches had accomplished that hollowing, a mile across and a mile down. The inner surface was lined with a smooth fused flux, light blue and gleaming as porcelain. Around this blue interior ran a succession of circular stages of completely transparent glassite, one above the other and increasing in width and circumference as they mounted upward.

At the top was a roof, also of transparent glassite. The entire place was set with diffused lights. No single point of radiance was completely exposed, but combined, they were enough to make the whole glittering cup a great blue sea of light. One million people would be gathered on the tiered seats of the many levels. In addition, though, televiso equipment carried the spectacle to all habitable quarters of the System.

At the bottom of the cup was a glass-enclosed platform, so small as to be barely visible from the upper levels. But that platform was an involvement of rays—Deltas and Epsilons—with their many amazing powers. Other rays made special vibration fields in the atmosphere throughout each audience stage. There were elaborate but unseen devisements to bring such fields into rapport with the platform.

So it was that, when the power was exerted, each occupant of the great stadium could see and hear what transpired on the central platform as though it were placed within twenty feet of him. Beside such a triumph, televiso images seemed flat and grotesque.

The million who watched on this particular night were in some degree selected without their knowledge. Groups of Martians, Jovians, Terrestrials and Venusians had been prevailed on to attend. Thus there was nearly a fair proportion of each government, instead of the usual majority of Venusians, or an extra throng of Martians, as the presence of the prince would seem to provide. Also, they were mingled together on all stages instead of being kept in sections.

Certain anxious officials of all the worlds watched, and felt considerably pleased. There was polite and even merry conversation among the peoples of the various planets.

Then the lights dimmed everywhere, to an undersea blueness. The spectacle began.

To each who beheld, it was as though the show were staged for him alone and almost within reach of his hand. First spoke a voice, so cunningly amplified as to seem quite natural and close.

"The story of the worlds, how they came to be born. It was thus."

INTO view swam the blindingly brilliant image of an incandescent, spinning ball of white fire. It hurled off tongues of flame, like blooming flowers of spurting fountains.

"The invader, the stranger that created the System. Watch!"

Another sun, dimmer but growing stronger, loomed swiftly against a black sky. There was a spurting leap of glowing star substance in that direction. Then the stranger had rolled along on its way. The splash of incandescence broke up into clouds, which spun themselves into smaller, round bits of fire at various distances from the parent body.

"Look!" bade the voice. "There they are. Ages pass in seconds as you watch. Mercury, Venus, Earth, Mars, Jupiter, the others—all separate worlds now, with peoples and governments. But once they were part of the same warm-hearted parent, the Sun. . . ."

The lecture and the spectacle were a basic pageant of the common origin of the worlds. Dissolving views followed, cunningly animated glimpses of the planets, past and present. Earth's oceans, Venus' jungles, Martian deserts, sprang out at the beholder. Finally the voice addressed them once more.

"Shall we ignore and forget our common brotherhood of the life-giving Sun? Shall life slay life until all the worlds are cold and dead? We who are gathered here say it shall not be! There is one here to organize our plea for the cause of peace most eloquently. A royal prince of Mars offers good-will to every living, thinking creature—Rrazanx!"

Into view came the figure of a Martian, braced upright in greaves and corselet, draped in a royal mantle of scarlet with gold workings.

A wild burst of frantic, unrestrained applause came from every dweller of Mars in that great amphitheater. The applause was taken up by Terrestrials, Venusians and Jovians. The figure lifted tentacles to ask for silence, and eager silence was given to him.

Before a word came from that artificial throat, something stole into view, moving exploratively past the richly clad figure of the Martian. Thousands of watchers, all the old soldiers who had been through the War, recognized that swimming spheroid.

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It was a roving bomb, small and deadly, propelled, guided and exploded by radio control!

A deafening cry rose on all sides, to warn the Martian prince. But the warning came too late. Noise could not pierce the glass sound-proofing of the platform. . . .

The bomb blasted with incredible fury. The Martian staggered, dropped his cloak. He collapsed all at once.

The theater went dark, as though foreshadowing the destruction of the Solar System—

IT was Nangor who had hurled that bomb —Nangor, whom Linda had trusted, who had seemed so efficient and faithful, whose Venusian mind could not be read by Yaxul, who had been Braman's agent and lieutenant from the first.

For he had never hoped for anything but war. War, he thought, might have given his decimated race and ruined world a chance to recover its strength and dominate the System.

Braman had thought him a fanatic. He had thought himself an idealist and revolutionist. In truth, he was a gambler, unbalanced but shrewd, with his life for the stake and half-dreamed power for the possible reward. With Braman captured, he meant to kill, not to hold Rrazanx as a hostage.

Linda Trojan, Gird, and Shiloh had bowed low beside the stage as the richly caparisoned figure mounted into view of the multitude. But Nangor had not.

Inside his jacket, he had fingered the little sphere that was the roving bomb, pressing the stud that set its controls in motion. He had tossed it lightly into air with one flapper hand, while the other in a pocket manipulated the controls.

There could be no real escape, even had his comrades been able to do aught but gasp. For the bomb floated to the mark like a bird to its nest. The first realization of disaster the others had was the explosion.

Nangor could have fled then, but he chose to make brutally clear to Linda exactly what would be the consequences of his desperate act.

"That finishes peace," he rumbled. "Finishes Rrazanx—Braman— But I, and the other true Venusians, are ready to fight for our old freedom and glory—"

He broke off, howling with triumphant laughter at Linda Trojan's blank face.

"It's true," he gurgled. "War broke my poor Venus. War will make poor Venus great again. Away with peace! We want no soft alliances! Now Braman's interests and governments will have to back up our fight for new power!"

Gird sprang upon him, and his fingers dug into the damp flesh of the Venusian's neck. Nangor gulped and struggled, but not mightily enough. He tried to strike Gird, then to draw a weapon from his belt pouch.

Gird's eyes were small gleaming slits. His teeth glittered between savagely curled lips. The two women gazed in silent horror. They saw a sudden crawling of muscles under the sleeves and the back of the tunic Braman had given him. Gird was pouring all his strength into the grip he had fastened upon Nangor's throat.

The Venusian's frog mouth fell open to the size of a kettle. The mottled face tilted back to a strange angle. A final effort—a sickening snap, like a stick on which too much weight has leaned.

Nangor's neck was broken.

Gird let him fall on the floor between his feet.

"That settles Nangor," Gird growled. "Who'd have thought he was the rat among us?"

"But what good is his death?" asked Linda Trojan shakily. "Only an empty, meaningless revenge. The prince is dead. Peace is defeated—"

"PLEASSE," purred a Martian voice behind them. "There iss no defeat yet. And the prrince iss not dead, forr a hero hass died in hiss place. Let me thrrough. I musst make the adrresss."

A gorgeous presence, all in silver casings to make its Martian body erect and strong, tramped past them. It gained the platform and stood over the form that lay there. Tremblingly Linda Trojan turned on the power. Prince Rrazanx of Mars—alive, unhurt, for all of Braman's plotting and Nangor's treason—began to speak.

"Frriendss, brrotherrss underr the Ssun, thiss iss no prretensse. A good sserrvant and fellow-crreaturre died before all of you. He died sso that I, hiss prrince and yourr well wissherr, could tell you of a hoped-forr age of kindnesss, peace, and love!"

His tentacles flourished downward toward the dead one.

"Hiss name wass Yaxul. He knew that one waited to kill me. He took my possition forr the moment, sso that he could ssuffer the death meant forr me! My peoples of all worrldss, let Yaxul not die forr naught. Lissten to what I have to ssay!"

The four watched in mute excess of emotion. They felt the solid metal cubicle in which they stood off-stage suddenly tremble, vibrate, as though its atoms would fly away into a cloud of vapor.

Linda Trojan and Shiloh Mell stared at each other.

Gird stepped across the dead body of Nangor to a communication speaker and switched it on.

"Hello, office," he said softly. "What's the vibration— Oh! It's incredible! I can't believe it—"

He turned abruptly to the two women. His scarred face was actually handsome with the soft smile that transformed it.

"They say it is applause. Applause such as was never heard before in one place. So much that, even in this sound-proof cell, we're shaken. The whole gathering is cheering with a single voice, for Yaxul and for the prince, and for *peace!*"

Rrazanx was speaking again, and the vibration ceased. The audience, and the world beyond, waited eagerly for his words. All the Solar System knew that the greatest obstacle to interplanetary peace had at last been removed. . . .

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CHAPTER X

Afterward

DAYS had passed. In her office sat Linda Trojan. Her eyes, shadowed by weariness, were intent on the televiso screen. Upon that screen appeared the head and shoulders of a middle-aged, square-jawed Terrestrial—Salon Rawes, President of the World League.

"I comprehend your wishes, Doctor," he said. "We sincerely regret that you will not remain as directress through the remainder of the Fair. However, it is only right that you be permitted to have a change of scene and occupation. You could ask for a thousand times more than that, and still not name the full debt the governments of the planets owe to you."

"Then it is granted?" asked Linda Trojan eagerly, despite her weariness.

"Granted. You will get written confirmation by the next mail. By that time the first colony ship will have left Ganymede for the Saturnian system. You can go to the Jovian system, and join the second group that leaves. Your position will be that of Chief of Committee for Technicians."

"Thank you," said Linda Trojan, and the interview was at an end.

She slumped more deeply in her chair and closed her tired eyes. A new venture was on the way, and she would be in the midst of it.

The moons of Saturn would be colonized, developed, perhaps become another independent world government. There would be both work and rest for her, and she was so tired and overwrought. President Rawes had been too kind in his praises. She had been a foolish woman, and only good luck had kept her from bungling the peace attempt completely.

A buzzer signal burned softly. She straightened up, smiling. She knew who waited outside. Immediately she sent word for the callers to be admitted.

John Gird and Shiloh Mell entered. They, too, smiled.

"It's been done, then?" prompted Linda Trojan.

"At the Ganymedean consulate," replied Shiloh. "We got our license from the Terrestrial office. The ceremony was performed by a Reverend Mr. Lawler of Venus, a jungle missionary here on leave. All quite interplanetary." She laughed, and so did her husband.

"Where will you go now?" asked Linda Trojan. "What adventure will suit both you reckless souls?"

"Home will suit us," stated Gird. "I've been given a job at the Veterans' Bureau in Los Angeles. Since war's gone out of fashion, there'll be plenty to do for old soldiers without planning what to do for new ones. There was some talk about television show business for both of us, but—"

"But it won't give us any time to ourselves," finished Shiloh for him.

WHEN the bride and groom had gone, again a buzz sounded. A face appeared on the televiso — Linda Trojan's new secretary, a freckled Terrestrial. It was odd not to have Nangor around, but she must get used to his absence.

"Dr. Trojan," said the new secretary. "This man Braman's out here. Shall I have the guards bring him in?"

"No," she replied at once. "Send him in alone. There will be no violence or other trouble."

John Braman entered. He was pale and moved stiffly, for his wound was still not entirely healed. He sat down, without being asked—and he sat in the lie-detector chair.

"You see," he said, "I have nothing to hide any more. I'm beaten, and decisively. It is good of you to trust me here without guards."

She watched him, not the detector indicators that would gauge the honesty of his words.

"As you say, you are beaten," she replied softly. "Would it make you glad to know that you're not going to be tried?"

His head bowed.

"I daresay I have you to thank for that."

"I did have a hand in the decision," admitted Linda Trojan. "I was able to point out that, even at the point of unconsciousness, you tried to admit defeat and warn us against Nangor. He was more desperate, more dangerous than you."

He smiled weakly.

"I was taught to doom millions impersonally, yet I balked at the death of one. Well, what happens to me now?"

"You are to go into exile," said Linda Trojan. "With the colonists to the Saturnian moons."

Braman thought for a moment, and lifted his trembling hands slightly, as if in acceptance.

"Perhaps I should be grateful for that specific decree. You must have realized that, with permanent peace assured, my business —war munitions—will be ruined. I welcome a chance to start a new career on an undeveloped world, even if I'm not exactly a young man."

"You're not exactly an old man, either," retorted Linda Trojan warmly. "And if all you once held is gone—"

"If it is gone, then I can forget it." Braman smiled as if that were a happy prospect. "Linda, try to understand with me what that means. I never was the real commander of that organization of power and money. I've been a slave of it. It was impersonal, beyond good and evil. Once I thought I could never turn back from it. But now it has left me."

"You can be different," she said.

Braman nodded, his forehead lined with fierce determination.

"Yes. And believe me, I shall. This isn't a declaration of guilt, Linda. It's a declaration of freedom. I've been a dangerous and damaging person. I have caused general sorrows like the misunderstandings of worlds, and specific ones like the death of Yaxul. Now, that is gone, both my power and my motive to be an enemy of your peace activities. Of course, I must bear punishment in my new life for what I have done in my old one."

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"You'll have every chance a colonist may have. You can try for, and gain, possessions or leadership. I myself shall watch you with interest."

"Watch me? Out on some Saturnian moon?"

"Yes. You see, I'm also going to the Saturnian system. We'll cross each other's trails quite often."

Suddenly they were both smiling broadly, brightly, happily.

"We'll cross them always," he breathed.

His deep voice had entirely lost its ruthless, defiant challenge. . . .

HEADLINERS IN THE NEXT ISSUE

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* * * * *

THE great museum's spacious quarters housed a Hall of Reptiles. A hall laden with the musty, age-old fossils of prehistoric mammals, relics of a forgotten past.

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* * * * *

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* * * * *

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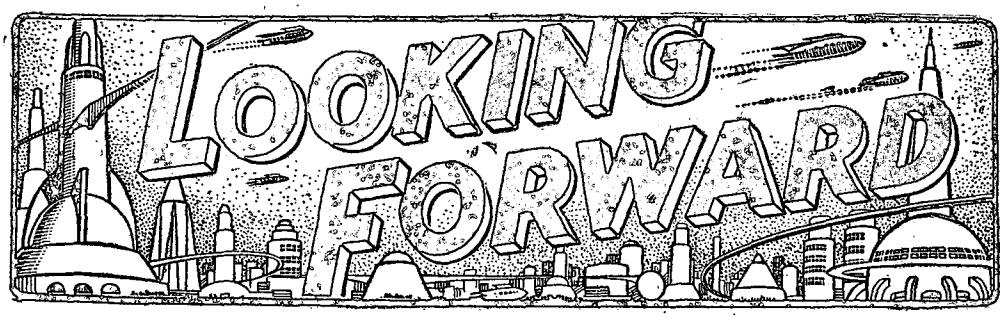

QUICK as a wink? That's only a fortieth of a second. They're taking photographs now with exposures of 1/3,000,000th of a second—stopping the flight of bats, "freezing" the agile tongue of a cat lapping milk, halting a bullet shattering a light bulb and even showing the sound and heat waves caused by a bullet's flight!

This incredible high-speed photography is the result of modern scientific experimentation, and is used chiefly in connection with electrical research work.

One contemplates the future, when the candid-camera wizards of tomorrow will be able to snap a molecule in action, trap an electron speeding in its eternal flight. Mother Nature had better beware of a photographic blitzkrieg!

THE HIGHEST OBSERVATORY

You'll have to climb two miles up to reach the world's highest astronomical observatory!

Two miles high in the Rockies, Harvard University is establishing the world's highest astronomical station. Located at Freemont Pass, Climax, Colorado, at an altitude of 11,318 feet, where the air is as nearly as possible dust free, it is to be a scientific outpost for observation of the Sun's corona, or "halo." It will be equipped with a telescope which masks out the image of the Sun but leaves the corona visible. By standing watch over the corona, scientists hope to forecast the violent electrical storms accompanying sun spots.

It looks as if astronomers are finally finding their place in the sun. . . .

THAT APPLE STORY

Want to win a bet from your physics instructor? Then get him to tell you the story of Sir Isaac Newton, as to how the famous scientist conceived the theory of gravitation. Your instructor, of course, will tell you that Sir Isaac Newton was led to discover the law of gravity when, as he reclined, beneath an apple tree, an apple fell upon his head.

But modern research tells us otherwise! For Joseph Jastrow, in his book, "The Story of Human Error," says, "The traditional story that the fall of an apple led Newton to evolve his gravitational theory may not be based on historical foundation."

As a matter of fact, researchers point out that, apple or not, Newton had been pondering the problem of gravitation for a long period when he left London in 1665 because of the great plague and went to his country home where the apple episode is popularly supposed to have taken place.

That's an apple for the teacher that will win *you* a bet!

REACHING FOR THE MOON

You're not a full-fledged fantasy follower unless you know the story of the man who wanted to move the Moon!

Shortly after the first World War, Antoine Pataki, a chemist by profession and astronomer in his spare time, suddenly conceived the idea that the only obstacle to our knowing more of lunar conditions is that the Moon itself is too far away.

Pataki therefore wrote a treatise which he sent to every noted personality, from the Pope to the President of the United States, suggesting that Earth install gigantic electro-magnets at intervals on its surface—to make the Moon modify her path and revolve around us at a distance of some few hundred miles.

"In this way," he wrote, "not only will a journey to the Moon become an everyday 'plane trip of an hour or two, but, the Moon being a stone's throw away, the reflection of the Sun's rays which illumine it at night will be much more powerful and our nights will be almost as light as our days."

But nobody took the proposal seriously, and Pataki died, disgusted at not having seen his project carried out.

SCIENTIFIC NUMBER GAME

What's the value of pi? How fast does light travel? How many stars in a binary system? How many satellites has Jupiter?

If you can respond to these scientific questions with the correct numerical answers, then you'll go for our scientific numbers game, crossword puzzle style, in the September issue of STARTLING STORIES. It's swell scientifun. Take a number from one to infinity, and you'll find yourself putting Old Man Leisure behind the 8-ball.

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THE SCIENTIFICTION RUSH

One of these days the big national magazines will "discover" scientifiction's appeal. Then we may expect to see the country's most popular authors drafted to tell the nation's citizenry about the conquest of interstellar flight, the fourth dimension, the wonders of the future, etc.

Or course, fantasy does break into the national weeklies once in a blue moon. A. Conan Doyle's "Maracot Deep" originally appeared as a serial in the Saturday Evening Post. Lord Dunsany has been represented with pseudo-scientific writings in Harper's and other magazines. And semi-annually Stephen Vincent Benet writes a fantasy piece for one of the big slicks. But for the most part, scientifiction as we know it has been almost completely ignored.

When the "scientifiction rush" does begin, you can bet your hat that the country's leading editors will turn to the writers of THRILLING WONDER STORIES for fodder. And one of their best recruits, we predict, will be Don Tracy, represented in our next issue with a long novel, "The Day To Come."

Don Tracy, if you didn't know, appears regularly in Saturday Evening Post, Collier's and other magazines with outstanding sport stories. But scientifiction is his first love and you can be sure nothing will alienate him from T.W.S.!

HEROES' GALLERY!

Want a pictorial record of the planetary pioneers of Mercury Expedition Number 1?

There are ten explorers featured in Gordon A. Giles' new "Via" series, which begin in this issue. Artist Wesso has portrayed them all in action for T.W.S. readers.

We'll run two or three portraits of Giles' crew with each episode in this series. And if you catch every installment of this great series you'll have a complete heroes' gallery of the men of tomorrow!

AMATEUR CONTEST WINNER!

Meet the seventh winner in THRILLING WONDER STORIES' national contest for amateur authors! Kenneth L. Harrison, Portland, Oregon, is the newest T.W.S. reader to ring the bell with a winning short story. His tale, "The Blonde, The Time Machine, and Johnny Bell," will appear in an early issue. Watch for it!

Honorable mentions for last month's submissions are awarded to:

J. R. Logan, Phila., Pa.; Speyton Henry, Phila., Pa.; Matthew Harlib, Brooklyn, N. Y.; Clive G. Cornish, Vancouver, B. C.; Dr. Bernard I. Kahn, Spokane, Washington; Alfred and Konrad Wm. Maxwell, Opelousas, La.

Why don't you enter our amateur contest? Write up that pet interplanetary tale or time-traveling yarn you've been hoarding all these years, before some other author scoops you on the idea. Type it up, double-spaced, and send it to AMATEUR WRITER'S EDITOR, THRILLING WONDER STORIES, 22 W. 48th St., New York City, N. Y. Enclose a stamped self-addressed envelope for the return of your manuscript should it prove unavailable.

If your story is a fairly good one, we will be glad to publish it in T.W.S. Prize stories are purchased at the same rates paid our staff contributors. We would like to present a new contributor as often as possible. Why not try for the honor?

JOIN THE LEAGUE

Have you joined our SCIENCE FICTION LEAGUE? It's an active, national organization composed of the world's most enthusiastic followers of science fiction—and it fosters that intangible bond between all fantasy fans. Just fill out the coupon.

To obtain a FREE certificate of membership, tear off the namestrip of the cover of this magazine, so that the date and title of the magazine show, and send it to SCIENCE FICTION LEAGUE, 22 W. 48th St., New York City, N. Y., enclosing a stamped, self-addressed envelope.

And, readers — write the editor of THRILLING WONDER STORIES a regular monthly letter. Tell us which stories you liked best, which are your favorite features and artists. Your suggestions and criticisms have made T.W.S. scientifiction's leading magazine. Help us maintain that leadership.—THE EDITOR.

THE CHICAGO 1940 WORLD SCIENCE FICTION CONVENTION

The biggest event of the year is the long-planned Chicago Convention, to be held September 1st and 2nd. All fantasy followers who can possibly attend are urged to do so. It's fandom's greatest highlight—and fans all over the world are cooperating to make this affair a success.

Further details are on Page 77.

VANCOUVER, B. C., SCIENCE CLUB

Mr. K. H. Mason, of 1353 Howe Street, Vancouver, B. C., writes: "I am very much interested in bringing together a group of science fiction enthusiasts for the purpose of organizing a science study club. A number of congenially minded fellow idealists, myself included, have already begun the organization of such a social club, and we are desirous of gaining new members."

Readers of T.W.S. residing in the vicinity of Vancouver, B. C., are urged to get in touch with Mr. Mason immediately.

[List of New Members Next Issue.]

SCIENCE FICTION LEAGUE.
22 W. 48th St., New York, N. Y.

I wish to apply for membership in the SCIENCE FICTION LEAGUE. I pledge myself to abide by all rules and regulations.

Name .....
(Print Legibly)

Address..... **Age**.....

City..... **State**.....

I am enclosing a stamped, self-addressed envelope and the name-strip from the cover of this magazine (tear off name-strip so that the name THRILLING WONDER STORIES and the date can be seen). You will send me my membership certificate and a list of rules promptly.

10-40

Use Small Denomination U. S. Stamps Only.

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VOICE OF THE PEOPLE

By Bill Brudy

You have uncovered a fine illustrator in Frank Murphy. Let him do more work as he did for Bester's story—portraits and such add immensely to a yarn. And his book-jacket for "The Sun Maker" *captured more of the* true fantastic appeal of s-f than anything I've seen in a year with the lone exception of some work by Finlay in another mag.

Could Murphy's technique be adapted to the cover? Any change there would be welcome. I would like to see Brown quietly shanghaied to Pluto. I would also like to see the re-establishment of the department *giving* the standings of the previous months' stories. (The feature novel always cops first place, so what's the use?—Ed.)

I'm still reeling under the impact of Carl H. (adrenalin) Anderson's formidable communique of August. If it is a rejuvenated reader-column he seeks, the boy has set a mighty example, verily. If his *vitriolic attack* on the covers doesn't rouse the art department from its lethargy, nothing ever will.

Also, if it were not for the kind words he said in behalf of yours truly, I would tell him to his incissors that THE READER SPEAKS is not the gruesomely degenerated thing he claims it is. Oh, it was a bit sugary there for a couple of issues, but not hopeless. Not while Messrs. Thompson (D. B. and Don), Moskowitz, R. C. Hamilton, Avery, Warners, and half a dozen others are in there pitching.

They are neither incoherent, nor juvenile nor banal, and what would be more gratifying than to see them all in one grand melee over a provocative subject. And from all appearances Brother Anderson is **it.** Sic 'em, boys!

Stories? "The Sun Maker" is your best novel since "Planet of Eternal Night" which was your best since "Dawn of Flame" which was your best. All, however, were five-star stories, and "The Three Eternals" and "The Day of the Conquerors" crowd them closely for top honors.

Among the shorter efforts are "Beauty and the Beast" and "There Was No Paradise"—the latter redeeming comrade Wellman after a momentary lapse. The mad Mr. Manx may also have a free rein from now on—he improves with age. Somebody heckles, "Where are you leaving 'Dosage,' Brudy?"

Brudy is busy watching a blonde passing on a bicycle and does not reply.—Wolverine, Michigan.

FOR FAN-MAG FOLLOWERS!

By Jack Chapman Miske

I think many of your readers will be glad to hear about an unusual magazine soon to appear.

The name of our book is BIZARRE, and the first issue will be mailed soon. It will be issued in a deluxe **printed** format. We have spared no expense to bring fantasy readers the finest publication of its type that we could possibly conceive.

Our covers will be of a heavy, durable white paper, chosen to stand much handling. We have designed an original and most unusual cover arrangement; and the illustration itself, in three colors, will be by a famous professional artist.

Our interior stock will be the highest grade eggshell **bookpaper.** The typeface is Caslon, long noted for its neatness and readability. There will be twenty-four pages, each nine by six inches, and, so that we can give as much fine material as possible, each will contain about one-third again as much wordage as the average magazine page!

BIZARRE will contain fiction, articles, (auto) biographies, columns, full-page drawings, and departments. It will feature fascinating material about and by all the favorite magazines and authors. For our first issue we have already scheduled such great authors as A. Merritt, E. E. Smith, H. P. Lovecraft, and John W. Campbell, Jr. Others of our contributors are David H. Keller, C. L. Moore, Henry Kuttner, Charles Tanner, Ross Rocklynne, Donald Wandrei, Robert E. Howard, Clark Ashton Smith, and Jack Williamson. Read BIZARRE for the inside of fantasy!

Complete information can be obtained from BIZARRE, 5000 Train Avenue, Cleveland, Ohio.

In this department we shall publish your opinions every month. After all, this is YOUR magazine, and it is edited for YOU. If a story in THRILLING WONDER STORIES falls to click with you, it is up to you to let us know about it. We welcome your letters whether they are complimentary or critical—or contain good old-fashioned brickbats! Write regularly! As many of your letters as possible will be printed herein. We cannot undertake to enter into private correspondence.

HOW DO YOU LIKE BERGEY?

By Wallace Buchholz

The main object of this letter is to bawl you out for spelling my name wrong over my letter in the August issue. According to this, my name is Wallace Buckley, it really is Wallace **Buchholz;** B-u-c-h-h-o-l-z, got it? I realize that I am not such a hot writer but my name was typed on the envelope, oh, well. . . .

Now that that's over I can go on with my letter. "The Secret of Anton York" gets first, of course, though I do not believe that it is as good as the last Anton York story.

"There Was No Paradise" would have taken second except for the element of gang life that was brought in. Just for that, Mr. Wellman's story gets shoved back into third *place while "A Problem in Diatonics,"* by Bond, takes over second.

"No Man's World" takes fourth ahead of "The Impossible Highway" which **is** pretty impossible and not so hot for a contest story.

I hate handsome, mustached villains in stories and that is why "Ice Over America" gets sixth. The story was rather confusing *anyway; why must Cummings use* such worn-out plots?

"Pebbles of Dread" takes last, though opinions probably will differ on this, it didn't agree with me.

You want to know my favorite artist, do you? Well it's Finlay, which reminds me, I haven't seen so much of his work lately, *whassa matta? Paul is one of the worst* artists (?) in s-f. Just because he **has** been in it so long I don't think he should get so much credit.

The cover this month really was terrible, though no worse than any of the others by Brown. Nearly everyone who writes in, seems to ask for a change on the cover, why not give us one? Finlay, Wesso, even Paul, but no more Brown, **puh-lease!!!**

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Can't you possibly get any stories by Burroughs? I notice there have been quite a few requests for him, well? . . .

Get rid of the Quiz, we can get all we want of that sort of thing over the radio. I agree with Carl Anderson and say get an article in its place. Even if you don't drop the quiz, get some articles anyway.

One good thing about T.W.S. is that it prints no serials, though the "Via," "Pete Manx," and "Anton York" series are almost like them.

That's about all for this month, except remember—more Finlay and less Brown.—330 Spaulding Ave., Ripon, Wis.

COVERING THE COVERS

By Donald Rollo

Enclosed you will find a quarter for which you will send me the eight scientifiction booklets. I still think there's a "catch" somewhere. Eight bound booklets for a quarter! Wow!

Now, for the first time in my life, may I talk a little bit about T.W.S.? Thanks, I knew it would be okay. Let's start with the covers. Brown is good, plenty good. But don't you think it would be a good idea to have a little variety in cover artists? Get Paul or Wesso to do a cover. (It would be too much to ask for a cover by Finlay—or would it?) If you must keep Brown, please get him to do a cover with a **blue** sky. Especially if the scene depicted is on Earth.

Take, for instance, the cover on the July issue, it would have been swell with white clouds and a blue sky for a background, but jumping Bipeds of Jupiter! the sky was a vivid yellow! By the way, did you notice that the ship on the July cover looked like a Paul creation?—not that it matters.

Stories: The stories are, as a general rule, answers to a science-fiction reader's prayer. Once in a while, there's a putrid one published, but that's to be expected. I like the policy of having a novel, two novelets, and at least four short stories in every issue. Boy, those novels take the cake! I won't attempt to say which one is the best.

As for the departments of T.W.S. all I can say is there are none to equal them. Here is a suggestion (one original illustration coming up)—why not have an author (a different one each month) write a beginning or an ending (or the middle—so what?) of a story, which is to be published in T.W.S.? Then let the fans, all who want to, write a story around the part published, making it contain the actual part given. You could publish the winning stories every month (you might make the contest bi-monthly), basing your judgment on how close the story stuck to the given part. You could reverse the contest and let an author write a story around a paragraph written by a fan—boy, would that be an honor.

This to Joe "He-Man" Arcier: How dare you talk about the Sweetheart of the Spaceways, Gerry Carlyle, like that?—Milton, Florida.

PERFECT ARTISTRY

By Charles Hidley

The big item of the August issue was, of course, the Anton York story. Much as I liked the story and the novel ideas it presented, still it seemed too anti-climatic after the wonderful godlike ending of "The Three Eternals," an ending that is supreme for all sequels. But the fact that the System still imagines the immortal pair dead offsets this one minor disappointing item.

Although I am a firm believer in and a staunch defender of the SFTPOBEMOTCOSFP, still I must commend Brown for his perfect artistry in the last two issues. The cover for **No Man's World**, the No. 5 story, although reminiscent of other ones by him, has, nevertheless, a new style and color arrangement that is very pleasing, especially with an almost total lack of the beloved red.

Could this increased care in his work be because the next two covers are by a different artist? I firmly believe so, and there are many cases of the same result due to competition in the illustrating world, examples being: Mrs. Brundage, Finlay, Marchioni, Morey, Paul and countless others. If they're good, keep them!

This was an exceptionally good issue because not only is there no "disappointing" story but I liked all of the illustrations—a novelty for me. I wonder why seeing illustrations by Paul in a mag always gives me a thrill when I first glance through it? No other artist has the same effect except Finlay. The two novelets were Nos. 2 and 3, with Cumming's ice yarn having the lead and the best Wesso pic in the issue.

"Pebbles of Dread" is my 4 story, and had a vague undertone somewhat like Binder's novel. That author, by the way, has such a gigantic scope of mind as almost to be frightening. I can think of no other one in the fantasy field who could dare use such open-minded theories as he does. His thought processes seem to be way in advance of others and his vision much farther into the future. To not care if the Universe of his birth is extinguished or not is very godlike indeed, and though Binder had him save it, still the introduction of such revolutionary tactics is daring indeed and makes for an interesting story. Paul did best illustrations, with Wesso next.

I would enjoy seeing the title changed to SCIENCE W.S., and Paul on the cover. Also Wesso and Morey on the cover and Finlay inside. I want trimmed edges and less printing on the cover, full-page framed illustrations for every story as in '34 and a much increased letter dep't.—New York City.

CALLING FOR CONTESTS

By Konrad. Wm. Maxwell

I saw recently where you asked for a monthly letter from the readers and though I wrote often I never made it a practice to send in a note every issue, but now I shall do so.

Well, now for this month's flowers and other business. We have no bricks as the issue was definitely too good. My brother Alfred and the other science fans and myself chewed over the mag. and here follows our verdicts on the stories:

(1) First Place goes to THE STORY—"The Experiment of Dr. Sarconi." This was really an exceptional tale—with practically no blood and such that acts as a filler in most stories. More Bates please!

(2) "Voyage to Nowhere," takes home the second prize. For a new writer—T.W.S. Prize-winner in fact—Bester is really exceptional. We like him and want to see more of his stories.

(3) But a complication enters, when we say that "Romance Across the Ages" has second place also. This was an excellent story and would rank first except for the colossal—superb—long novel. We asked for more tales of future people, with number names and such and we were overjoyed to find that you were giving them to us.

(4) Reed is an author! "The Machine Brain" was an old theme, but Reed worked it up into an enjoyable, interesting bit of literature.

(5) In my letter that was published in the Reader's dept. I made quite a flurry about "Beauty and the Beast" and I expected to be laughed at for liking that emotional—powerful tale. But I found that the fans enjoyed it equally as much. I asked for more like it and so did the boys in our little circle and also the fans. So therefore you gave us—"Out of the Depths," and let me say that though it takes fourth place—it was grand and we all want more of this type of story.

(6) Helen Weinbaum's "Honeycombed Satellite" is next. The story was not new—nor exceptional, but her knack of writing and her unusual characters and free simple style made it a pleasure to read. The little "Toto," the electric light eels, etc., certainly smacked of Stanley G. Weimbaum's style. More of Helen's tales—one in every issue if possible.

(7) "Tangled Paths" is last, but its last equals other mags.' first place. It was puzzling, interesting and enjoyable. The lights on Mars and the struggle against death made a great plot, but it could have been worked

(Continued on page 125)

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The Story Behind the Story

ABOUT three-fourths of the Earth is under water! The oceans have gone through the interminable cycle of evaporation and distillation through clouds, rain, rushing rivers and ocean for so many ages that they have gathered something of just about everything on the surface of the globe.

Nearly 4 per cent of the seven seas is represented by solid matter; a comparatively small percentage, it is true, but the waters of the earth are so boundless that this 4 per cent contains about two hundred million tons of gold—enough to pave our streets with the precious metal—several thousand tons of radium, and more than two trillion tons of copper, or enough copper to last us for at least a million years at the present rate of consumption.

The problems standing in the way of mining the sea for its unlimited treasures of valuable metals may never be surmounted, but enough has been accomplished within recent years to show that the project is not the fantastic dream it was thought to be not so long ago, and to stimulate further research on the part of pioneers.

What will happen if and when dust-bowl blights of the future drive man to a new home—the sea? How will man wrest the treasures from the oceans? And will the waters yield submissively to man's ruthless exploitation?

Arthur K. Barnes answers all these fascinating problems in his dramatic novelet, WATERS OF WRATH, a story of a floating empire. Here's the literati lowdown as to how the yarn came to be written:

WATERS OF WRATH was inspired, as so many stories are, by newspaper articles. In this case the offenders were two pieces in the Sunday supplement of the local Republican newspaper (Democrats can now place the blame where it belongs). Taking a tip from Nelson Bond, I refuse to discuss the first of those articles, for fear it would give away the climax of the story, which will probably be guessed by the smart readers, anyhow.

The second article, however, dealt with the development of the potential riches of the sea. It was fascinating and revealing. And for those finicky readers who are apt to cavil at any suggestion that the wealth of the sea could ever be exhausted, let me say here that it not only **can** happen (in the space of centuries, of course), but it probably will. Oceanographers are **already** laying down long-range plans to prevent just such exploitation of the sea as I have pictured in the yarn.

Probably I shall convince no one, but I feel it incumbent upon me to state categorically that this story was in no way inspired by "Grapes of Wrath." I've neither read the book nor seen the picture. The fact that there are close similarities between the two (which fact the editor at once spotted and capitalized upon by changing the title to its present form—ain't he the shrewd one?) is because both stories have their roots in the exhaustion of natural resources and consequent strife of the smart haves vs. the not-so-smart have-nots. I feel that WATERS OF WRATH builds up naturally from the original premise.

According to the book, a story which is a natural out-growth of environment and character should be at least fairly good. My hope is that some of the more easy-going readers will be kind enough to consider WATERS OF WRATH within proton-blast range of that classification. Me, I dunno. I only work here, when they let me.

NEANDERTHAL PETE

PETE (EON-JUMPER) MANX, the paradoxical pitchman from the present, is sadly but wisely adding to his compendium of knowledge. For, as the result of his many time-hopping escapades, the incorrigible era-bridger has formulated Manx's Law: "The further back in time a guy travels, the harder it is for him to be tops."

Refined down to T.W.S. lingo, Pete's illuminating discovery implies that as we roll back the centuries, science gathers no moss. Man's twentieth century knowledge is of little avail. And it's all too true.

Suppose you were stranded in the Stone Age. How could you utilize your familiarity with present-day science to help you in the battle of survival? You couldn't build anything mechanical, for lack of metals. Chemistry would be an impossible lore—how would you extract the elements? Electricity, radio, etc., would be outlawed.

And so it goes. In the kingdom of the cave-man, the rolling stone is tops. And now let Kelvin Kent tell you about rock-bound, muscle-man Manx:

MAN ABOUT TIME grew, oddly enough, from cheese. That's my profession—I do things, in a chemical way, with various types of cheese—so that the consumer for our particular product is sure of getting good rarebits and blintzes; and one day at work, during a lull in the cheeses, I got into a conversation with my assistant.

He had read several of the Pete Manx yarns, and contended that I had made things much too easy for Pete, always letting him have sufficient ready-made material at hand to solve his problems. I could realize that there might be some truth in this. But, I said, from earliest times man has tried to develop science with whatever means he has at hand. Even in ancient Sumeria, the cradle of civilization, there was science of a sort.

"Sure," my assistant said, "but what about prehistoric man? Suppose Pete went back in time to cave-man days? He'd have absolutely nothing to work with then."

The idea attracted me. Even the redoubtable Mr. Manx would find himself up against a tough problem if he went Neanderthal—so that night I started the story. Also, I wanted to solve the ancient paradox about a man killing or meeting his own grandfather, his father, or himself, by traveling back through time.

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Oddly enough, after I'd finished the yarn I discovered that the paradox was still there. I mentioned the matter to Pete, but he seemed to think "paradox" was the place where Adam and Eve lived, so I got little help from that direction. Sometimes I wonder whether Mr. Manx is quite as smart as he pretends to be. Oh, well . . .

Finally, I'd like to thank the readers for the very kind reception they have given the Pete Manx tales; and I trust they will continue to like them. Especially since a prophet is without honor in his own country, and neither my wife nor my daughters regard me as a literary light. My recently-acquired granddaughter has nothing at all to say about it, unless "glub" may be taken as a criticism.

MERCURY EXPEDITION NUMBER 1

AND now, pyramids on Mercury! Gordon A. Giles continues the scientific search for the answer to the greatest riddle of all time—the enigma of pyramids on four planets of the System!

We'd like to know what's behind 'em, too—even if we have to follow "Via" Expeditions to every one of the nine planets!

Hello, readers! Via Expedition Number Three reporting, from Mercury. Giles at the keys.

After Mars and Venus, the next logical and nearest planet to visit is Mercury, in looking ahead to interplanetary exploration. Thus, in this story **Via Mercury,** my intrepid crew of Columbuses is sent there. Only four are left now of the original ten who first set foot on another planet than Earth—Mars. Captain Atwell, Markers, Parletti and Gillway. I hope you're as glad to see those names again as I am to continue them in a new exploit. Tarnay and Karsen are veterans of the Venus Expedition, and here's four new men.

Which of these ten will have to sacrifice their lives in the venture? Five men found a grave on Mars, four on Venus. How many of these men on Mercury will have to make the supreme sacrifice? Perhaps the answer will surprise you, when you read the story.

To go over a few points, I'm aware that astronomical authority today states there is little if any atmosphere on Mercury. But remember, it is merely a statement of theory—and theories change. The theory is that Mercury's light gravity would be unable to hold an atmosphere, especially under a blazing sun only 36 million miles away, which would heat all gases beyond the escape velocity.

But what of the eternal Night Side, where gases have frozen, and which must circulate around the planet because of libration? Direct observation tells little. Earth's atmosphere would be hard to detect from Mercury's distance. Most of Earth's air is packed within ten miles of the surface. Compare ten miles with the diameter of 8000 miles. Visually, Earth's fairly extensive atmosphere would be only a thin thread circling the surface. Mercury might have a still thinner ring, absolutely invisible from Earth, but nevertheless there. I rather think no astronomer has the right to say a planet has or hasn't an atmosphere. The only way to find out really is by going there—as my crew has.

About life. Only the so-called Twilight Zone of Mercury could bear life comparable to ours. But it's possible for a silicic form to withstand the terrific temperatures of the Day Side. It's not impossible, anyway.

I go into these things rather defensively, in that I've always tried to make the "Via" stories as realistic as possible. I try not to violate present-day knowledge any more than necessary for story value. I think the Mercury here presented isn't too far from what it might actually be.

Now the pyramids. I imagine you expected them. The pyramids have become the running thread, the common denominator, of all the "Via" stories. I hope you don't feel,

(Concluded on page 124)

GET YOUR BODY OUT OF THE DUMPS

Stimulate Digestion Build Up Vitality

Feel down in the dumps? Lack your old PEP? Have frequent slight digestive upsets? Then—if there is nothing organically wrong with you—SLUGGISH DIGESTION may have you down. It can give you heartburn, gas, a dizzy head.

Don't resort to harsh laxatives or drugs for sluggish digestion. START those slow DIGESTIVE JUICES FLOWING FASTER. Set the millions of tiny cells of Fleischmann's live Yeast to work on these digestive-juice glands. This yeast is a STIMULATOR. It starts digestive juices flowing faster. In test cases digestion was greatly increased. Eat Fleischmann's Yeast regularly. Two cakes a day—one first thing in the morning, one a half hour before supper. See if you don't begin to FEEL LIKE A MILLION. Write today for "You Can't Feel Well If Digestive Juices Are Failing," F. Y. Co., Dept. Q-O, 691 Washington St., New York. Absolutely FREE.

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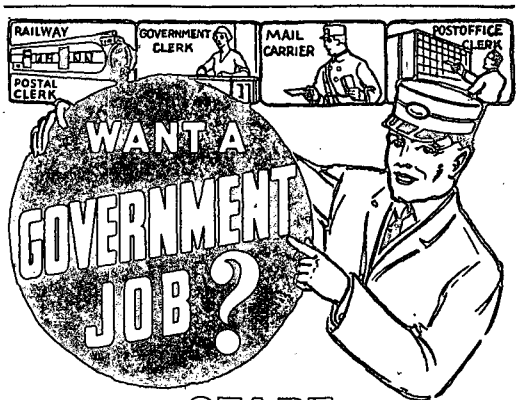

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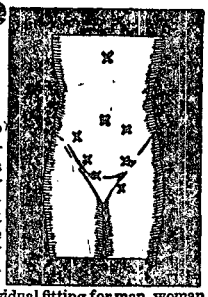

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(Concluded from page 123)

though, that I'm unnecessarily prolonging the agony. That is, about why the Martians built them, and why the Martians died out? But from the viewpoint of realism, **would** the answer come quickly? All the misty civilizations of the past on Earth have been pieced out only through years and years of research by thousands of inquiring minds. Certainly my crew shouldn't in one stroke decipher all the enigmatic Martian records and blithely tell all about the Martian Age. They'd better not. Or I might not have the chance to write more "Via" stories!

FAIR OF THE WORLDS

PREDICTING the trends of the future is a scientifiction writer's job. But, more than that, he has to extend his imagination and show us how the future will improve on the present. Time marches on—and we'd all like to know how. Henry Kuttner's Hollywood-on-the-Moon series, for example, portray vividly the problems confronting the movie-makers of tomorrow. And in last month's issue of T.W.S., Arthur J. Burks painted a captivating picture of the West Point of the future, based, of course, on the great traditions of that fine institution.

Rounding out our saga of "flashes of the future," Manly Wade Wellman contributes THE WORLDS OF TOMORROW, his conception of a Fair of the Worlds, destined to come about some day, which will represent all the inhabited planets in the Solar System. We're all for Wellman's preview of tomorrow's Fair. But do we have to wait until the Thirtieth Century?

The inspiration for this yarn is fairly obvious—what fan or writer of science fiction hasn't wondered, while roaming the World's Fair out Flushing way, what the fairs of the future will be like? Not only nations and races, but planets, will be represented there; many diverse world-peoples, with the most widely assorted personalities and motives, will be thrown close together.

I couldn't look into every heart at this fair, but I could look into a few, shifting my gaze again and again. I found them not all good nor all bad, any more than real folk are. Quickly I roughed out these main characters, and after that there was a lot of discussion, with editors and other writers, before the story itself was written. This is more a character yarn than anything I have done in a long time; and I am sorry that my oft-urged dream of universal peace seems very, very flimsy at present. Maybe it will truly come in the Thirtieth Century.

In this work, again, I'm trying to give another glimpse of the future I see; that is, in a series of stories I offer the same conception of various planetary races, civilizations and characters. One or two fans object to this, and a rather larger group like it. I will be glad of reactions to this system of writing science fiction—not a bunch of sequels, as regards characters, but rather a group of revisits to the same Mars or Venus or Jovian system.

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THE READER SPEAKS

(Continued from page 121)

up more.

Well so much for the stories—most were superb and the worst were excellent. Keep up the work and stay on top!

As for the illustrations—all are good and especially the interior drawings, which smack of the oldtime science-fiction illustrations. As for the "Out of the Depths" cover illustration—couldn't you have made the background azure like a real sky? We don't need a gaudy cover on T.W.S. Nevertheless though—the cover was grand!

Contests of any kind bring the readers closer to the mag, and its staff. We have all bombarded you with amateur attempts at story writing, and we like the contest and the advantages it offers the readers. We also like the contest readers' prize stories—it makes us feel good to know that one of us has crashed the printed page. We hereby vote for you to continue the AMATEUR CONTEST and try to give us a story every single month. Also, ask for more cover contests—even a picture that you ask the readers to write a story about. We await "The Impossible Highway," with paper and pen—hoping that the prize will be the illustration for "Out of the Depths." We want to win that particular drawing for our den.—Opelousas, La.

FIRST LETTER

By Frank W. Klos, Jr.

Congratulations on your latest issue of T.W.S. I've been reading your magazine for many years but I've never written to tell you my opinion. Your mag is superb in every detail except for a few items—namely:

A: No Penton and Blake stories for ages! Has Mr. Campbell gone out of business, or what has happened to him?

B: Not enough illustrations by Alex Schomburg. In my estimation, he is one of the best illustrators on your present staff. This new artist, Murphy, is o.k., too. And please give Paul a chance now and then.

C: No trimmed edges. Surely T.W.S. ranks with the best.

That's all the brickbats I have at the present. Now for a few laurels:

First, your group of authors is practically *impossible to beat and ditto with the artists.* Second, your special scientifiction novel section is a sight for sore eyes. For years we fans have dreamed of such a thing. Third, your amateur contest rates tops with me. Some of those amateurs spring stories that make some of the old stand-bys look sick.

Let's see more of Pete Manx and Tony Quade, the Abbott family and Gerry Carlyle. Please, also, get Gordon A. Giles to tear off a few more "Via" yarns. And while you're at it, get some more stories by Jack Williamson, Ross Rocklynne, Eando Binder and Warner van Lorne, please.

That's what you might call a fan's prayer, so please hearken to my pleas for I'm sure many other fans will back me up in those requests.—898 McColloch Street, Wheeling, W. Va.

(Mr. John W. Campbell, Jr., now edits a rival scientifiction magazine. Schomburg and Paul will be represented in early issues. A "Via" yarn in this issue. A Gerry Carlyle novel coming soon.—Ed.)

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By D. B. Thompson

Ratings for August: 1—"The Impossible Highway"—a fine story of its type, and, especially for a contest. 2—"Pebbles of Dread." 3—"No Man's World"—not one of Kuttner's best, but still good. 4—"The Secret of Anton York." 5—"A Problem in Diatonics." 6—"There Was No Paradise." 7—"Ice Over America."

None of the above compare with "The Seven Sleepers," "Day of the Titans," or "Parallel in Time," for example.

The current Anton York story is much bet-

(Continued on page 126)

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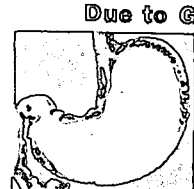

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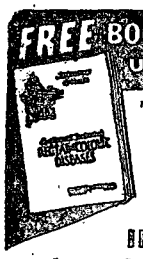

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(Continued from page 125)

ter than its predecessor. It is more logically developed and more consistently written.

Carl H. Anderson's letter sums up the shortcomings of T.W.S. pretty thoroughly. I agree with much of what he says; but I heartily disagree with him in the most important matter—that of stories. I think the stories for the first half of 1940 have averaged much better than in the past; the stories he selects as the best so far in 1940 (plus a few others equally good) are among the best T.W.S. has ever printed. Some few of them rate with the best stories in any mag in recent years.

I agree that an unduly large percent of the fan letters are pretty sugary. But when he asks for feuds! Shades of asininity, personified! Don't publish serious fan-feud letters! Let the fan-mags handle those, if we must have them, although why we should, I can't imagine. They invariably degenerate into personal recriminations and mud-slinging, and that, certainly, doesn't help scientifiction! Pardon my vehemence.—3136 Q St., Lincoln, Nebraska.

IS BROWN'S FACE RED!

By Carl H. Anderson

Well, you really should give me a medal or something for the way I pulled you out of the spring doldrums. Modest fellow that I am I would never hint that it was my soot-slinging in the August "Reader Speaks" that began this renaissance. But something did. And my letter was there, and—well—?

Frankly, you're looking better.

Three fine novels have contributed enormously to this. Though Binder's latest is not equal to its immediate predecessor, "The Three Eternals," its general structure is sound and the action unusual enough to hold the interest. Odd though, isn't it, that master-scientist York still believes that daffy fallacy about snakes charming birds (page 95—bottom column 1). And Vera's face-lifting by Dr. Wesso is certainly an improvement over the acid-pussed version of her in the Dec. issue. Howinell does Tony keep his mind on his work?

The Bates opus was mildly amusing for the umpty-steenth time. The situation of a villainous scientist doing vile things to winsome maidens, however, makes me want to place the mag in the middle of the room and see how far it can be tramped into the linoleum. But for all that, I still say the yarn was o.k. At least I read every word of it.

"The Sun Maker," while by far the best of the three, and your best since January, is a perfect example of what the editorial scissors or the cramped story policy of a mag can do to a superlative yarn. What I'm getting at is that your novels are not novels at all— they are simply novelets that try to cover the scope of a novel and fail.

J. W. has probably the most distinctive style in all science fiction, unless it is equalled by Weinbaum and E. E. Smith. So completely his own is this style that the first paragraph of his stories, often the first sentence, reveals the author unmistakably as Williamson (in case you doubt the by-line). But given room he can temper this characteristic touch so that it doesn't drown out the story.

In "The Sun Maker" he did not have the room. It is Williamson concentrated—boiled down to the essence. It is true, the Williamson brilliance is there, unaltered, but I can't help thinking how five thousand more words would have helped it. Lengthen your "novels." They'll improve.

And THE READER SPEAKS is really beginning to speak instead of babble. Of course this couldn't be the Anderson influence. Too soon for that. Maybe it's just a case of a thing having to rise when it can go no lower.

I've been relatively easy so far, but don't go settling back in that swivel chair, yet, my friend.

For the scent of the covers remains unchanged, filling the air with the same rank odor of pollution and decay as ever. Upon reaching the newsstand, I received the odd impression that the staff must have been con-

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ducting a skunk-skinning contest in the back room. I've come to the conclusion that either you don't place any value on the readers' frenzied pleas or else Brown has the kind of a contract I wish I had.

"Foul" and "abominable" are two adjectives which I could have applied to H. V.'s efforts the last time and didn't. But they fit well, and I now apply them. Also "putrid, repetitive, lurid, vile, odious, loathesome, revolting, abhorrent and nauseating."

Taking a cue from Alger I hereby propose the formation of a subsidiary organization—the SFTIDAQOHVB—(The Society For The Immediate Drawing and Quartering of H. V. Brown).

Put Paul or Schomburg or Wesso or your new sensation, Murphy, on the cover, and watch the congratulations roll in. This Murphy is a lulu. Compared to Brown he is a delicate pineapple mousse beside a peck of raw garlic.—Hotel Perry, Petoskey, Michigan.

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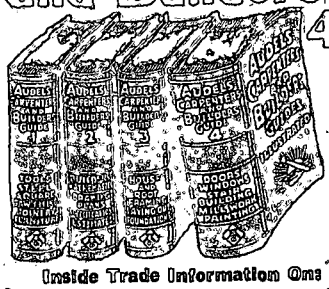

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ANSWERS TO SCIENCE QUIZ

(On Pages 42-43)

POSITIVE OR NEGATIVE

1. True.
2. True.
3. True.
4. True.
5. False.
6. True.
7. False.
8. False. Cepheid stars are characterized by variable brightness.
9. True.
10. True.
11. True.
12. False. Passenger automobiles employ the Hotchkiss drive.
13. True.
14. False. The number can be identified as pi.
15. False. The paths are called circuits.

TAKE A LETTER

1. C.	6. A.	11. A.
2. D.	7. A.	12. A.
3. B.	8. A.	13. B.
4. A.	9. B.	14. B.
5. A.	10. B.	15. C.

WHO'S WHO

5, 6, 7, 2, 1, 3, 8, 4.

THE ACID TEST

All the acids beginning with the letters A, B, or C are organic; the others are inorganic.

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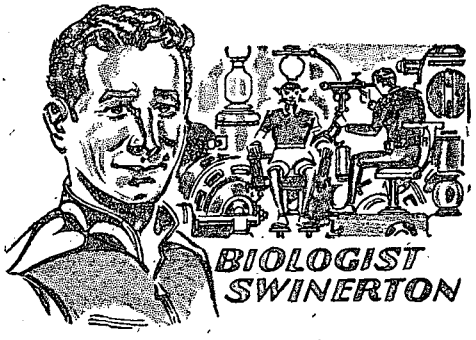
98.6°; 1.8° F.; mouth; higher; eliminated; metabolism; skin; rises; brain; 86° F.; 110° F.

COMING NEXT ISSUE



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Type or hand-print clearly in submitting announcements. THRILLING WONDER STORIES will not be responsible for losses sustained. Make plain just what you have and what you want to "swap" it for. Enclose a clipping of this announcement with your request. Address: Swap Column, THRILLING WONDER STORIES, 22 West 48th Street, New York, N. Y.

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Good 40-watt input amateur radio c.w. (code) transmitter for good telescope with first class optical system including at least 2-inch achromatic object lens. G. W. Bloemendal, 528 So. Harvey Avenue, Oak Park, Illinois.

Will swap 100 stamps for 20 Kool coupons. Ted Young, Rt. 3, Snohomish, Washington.

What have you? I will trade my stamp collection for some land or a house. Wesley L. Morgan, R.F.D. No. 7, Bangor, Maine.

Swap complete chemical laboratory including glassware and chemicals worth seventy-five dollars for good candid camera, 3.5 f or better. L. Silverbloom, 633 E. 16th Street, Brooklyn, New York, Apt. G-3.

Have 150 power microscope, No. 7½ erector set in used condition and electric wood carver. Would like typewriter or any other item you may have. Raymond Corkey, 240 Franklin Street, Brooklyn, New York.

Have No. 7 Oliver typewriter and United States stamp collection. Want small typewriter or stamps. Write for details. Paul Bedell, 7015 Kedron Street, Pittsburgh, Pennsylvania.

Send 100 different stamps and three cents postage. Receive same amount plus a Trinidad scenic view. E. L. Parr, 405 Ash Street, Trinidad, Colorado.

I will trade match covers and foreign stamps for Indian head cents. I also want precancels. Peter Retep c/o Raybin, 1133 Boston Road, Bronx, New York.

Send 100 to 1000 foreign and receive same amount less 10 in return. George Ingham, 1980 Gildersleeve Avenue, Bronx, New York.

Will swap typewriter, for light 2 or 3 h.p. outboard motor or for 8 mm movie outfit—camera, projector and screen. Furnish complete description. Roy W. Schutzmann, 628 Nashville Avenue, New Orleans, Louisiana.

Have latest 10 volume set of Audels Electric Library in perfect condition. Want old United States stamps (commemoratives, preferred). Will trade foreign stamps for United States, too. Earl De Haven, 3416 West 63rd Street, Los Angeles, California.

Will swap money-making plans, secrets, formulas, etc. for anything useful. Send me your list at once. Ralph F. Ryden, Johnsonburg, Pennsylvania.

Trade stamps, postcards, postmarks, sheet music, match covers, etc., for coupons from Octagon, Borden and Kirkman's products. William Stepp, 510 Lycoming Street, Williamsport, Pennsylvania.

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Size Rim	Tires	Tubes
29x4.40-21	$2.15	$1.05
29x4.50-20	2.35	1.05
30x4.50-21	2.40	1.15
28x4.75-19	2.45	1.25
29x4.75-20	2.50	1.25
29x5.00-19	2.85	1.25
30x5.00-20	2.85	1.25
5.25-17	2.90	1.35
29x5.25-19	2.90	1.35
29x5.25-19	2.95	1.35
30x5.25-20	2.95	1.35
31x5.25-21	3.25	1.35
5.50-17	3.35	1.40
29x5.50-19	3.35	1.40
29x5.50-19	3.35	1.45
6.00-17	3.40	1.40
30x6.00-18	3.40	1.40
31x6.00-19	3.40	1.45
32x6.00-20	3.45	1.55
33x6.00-21	3.65	1.55
32x6.50-20	3.75	1.75
6.00-16	3.75	1.45

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Size	Tires	Tubes
30x3½	$2.35	$0.95
31x4	2.95	1.25
32x4	2.95	1.25
33x4	2.95	1.25
34x4	3.25	1.35
32x4½	3.35	1.45

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Size	Tires	Tubes
30x5	$4.25	$1.95
33x5	3.95	1.75
34x5	4.25	2.25
32x6	7.95	2.95
36x6	9.95	4.45

TRUCK BALLOON TIRES

Size	Tires	Tubes
6.00-20	$2.75	$1.65
6.50-20	3.45	1.95
7.00-20	3.95	2.95

ALL OTHER SIZES

Size	Tires	Tubes
38x4½	$3.45	$1.45
34x4½	3.45	1.45
30x5	3.65	1.65
32x5	3.75	1.75
36x5	3.95	1.75

Size	Tires	Tubes
34x7	$10.95	$4.65
38x7	10.95	4.65
36x8	11.45	4.95
40x8	13.25	4.95

Size	Tires	Tubes
7.50-20	$6.95	$3.75
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9.75-20	13.95	6.45

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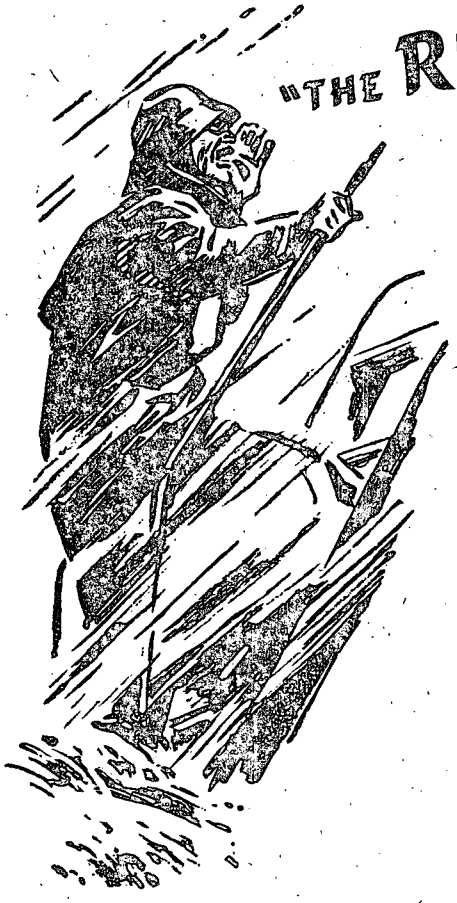
"THE RUDDER'S GONE, SIR!"



Fateful moment — when a ship loses its rudder! Then a great hulk drifts helplessly — and unless aid comes, that ship goes "on the rocks."

There are *men* who drift all their lives. Is it surprising that these rudderless souls end up "on the rocks"?

I. C. S. students are men who fashion their own "rudders" — out of common sense, determination, and *sound, essential training!* If *you* want to come into the Port of Prosperity and Security, then *you* must get the training you need. Get it "the I. C. S. way" — from textbooks that have been adopted by 25 State Universities — through methods that are *individualized* to fit your own *personal* requirements. Send the coupon — *today* — for complete information.

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- ☐ Radio Servicing
- ☐ R. R. Section Foreman
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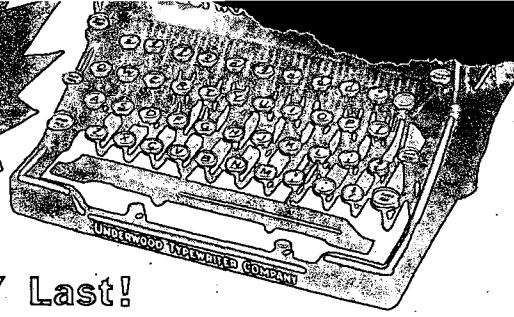

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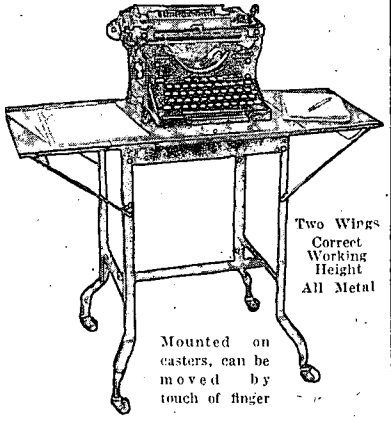

For those who have no typewriter stand or handy place to use a machine, I make this special offer. This attractive stand that ordinarily sells for $4.85 can be yours for only $3.00 extra added to your account. **Quality built. Note all its convenient features.**

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AFTER

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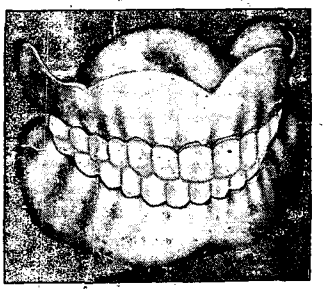
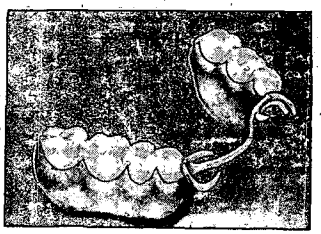
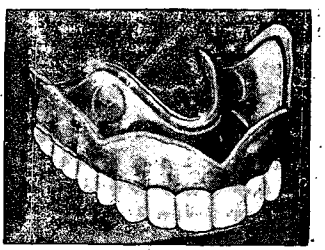


HAND-CARVED SET



PARTIAL



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